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Voice of
American Aeronautics

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**FORTNIGHTLY
REVIEW**



Right Trends

IT MATTERS little these days which phase of the war is being discussed—the end result resolves itself very simply into the one clear-cut fact that this is an air war. And as soon as this premise is presumed to be a fact, the necessity of using air transportation on a broad scale for supply lines and communication becomes only too self-evident.

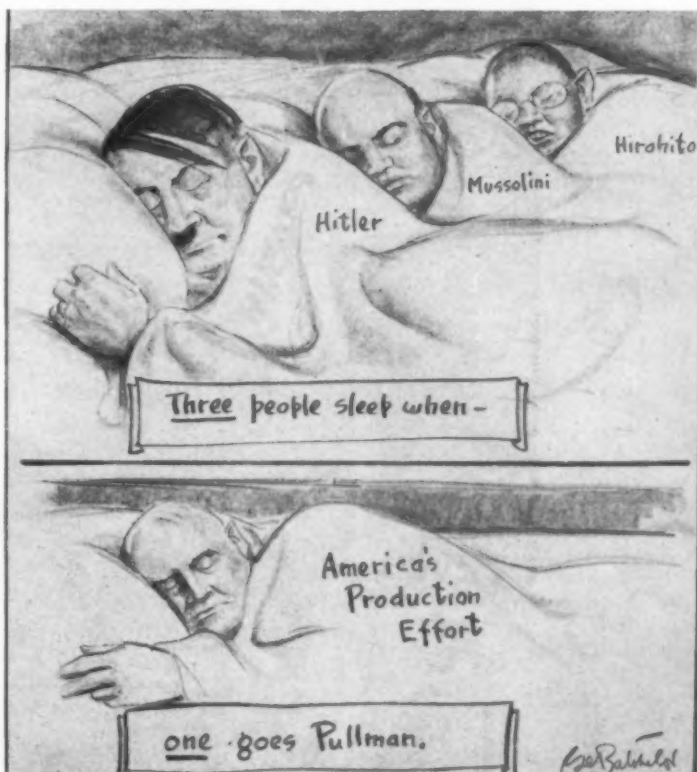
There are numerous indications that air transportation is beginning to be recognized as essential to the conduct of the war effort. Up until press time, at least, it has not been possible because of military regulations to publicize these trends and developments, but the gradual awakening to the vast air transport task ahead in the execution of the necessary air offensives against the Axis is perhaps the most encouraging single sign on the horizon.

To a nation which slept peacefully on without a vigorous national air policy while the Axis built airplanes by the thousands, to a nation which had only 350 air transport planes operating within its boundaries at the height of its air transport development, the task which lies ahead is a stupendous challenge. Just as this nation has had to change its thinking from a few hundred fighting planes to tens of thousands, so must the nation change its understanding and

(Turn to page 26)

Thousands of Women to Ease Threatened Labor Shortage

Reply to Pullman



Cartoonist Improves on Pointed 'Two Can Sleep' Ads
See Story on Page 3 and Editorial on Page 26

Bulletin: American Airlines' directors on Apr. 9 accepted resignation of C. R. Smith as president and director, and elected A. N. Kemp to succeed him. Lt. Gen. H. H. Arnold urgently requested the company to release Smith for full time service "as an officer of the Army Air Forces," especially in connection with expanding military air transport operations. American's new president is on leave as chairman of Pacific Mutual Life Insurance Co., Los Angeles. He is a member of the Executive & Management Committee of Southern California Co., and is a director of other West Coast corporations.

20,000 'Girls' Already Working; Many More Soon

By CONRAD CAMPBELL

THE AIRCRAFT industry will be confronted with an acute labor shortage, certainly by fall and probably much earlier. That is the unqualified opinion of personnel managers everywhere.

While admitting that the question of manpower is not immediately pressing in most instances, long range observers now foresee an ultimate end to present bottlenecks resulting from the supply and coordination of materials and parts.

When that happy situation prevails, it is freely predicted that all-out seven day, 24-hour production throughout the industry will gobble up all available workers in short order.

Trebled production quotas to be met daily, completion of new units in the vast expansion program that draw heavily on the rapidly diminishing resources of the skilled labor pool, plus Selective Service rulings that will take thousands of men from work benches and the assembly line, all add up to a prospective problem that on the face of it might seem almost insurmountable.

(Turn to page 13)

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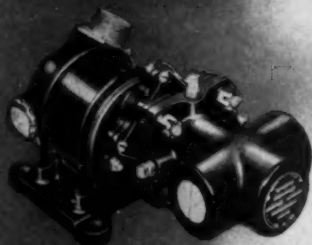


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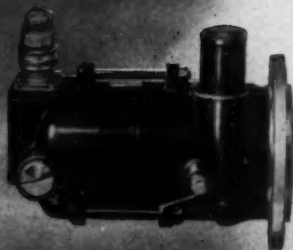
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Pullman's Fear Campaign

THE PULLMAN Co. is continuing its fear advertising campaign in current magazines.

The Pullman sleep theme was first called to the attention of AMERICAN AVIATION readers in the Mar. 15 issue (Letters, p. 23), at which time the "Two people sleep" ad was reproduced. For late comers, the classic picture-story is repeated below (see cut).

The tender picture-story concerns Dick Hill and Mrs. Hill. The setting: A night full of snow—falling faster, "from a sky that looks black and angry." Dick is on the road, traveling by Pullman. "Dick Hill likes Pullman travel. Tomorrow morning he'll be where he expects to be."

In the meantime, "A hundred miles away, Dick Hill's wife puts away her knitting, shuts Spot in the



Two people sleep when one goes Pullman



For comfort, safety and dependability—GO PULLMAN

kitchen, opens the front door and looks out. The snow is deeper . . . Dick Hill's wife smiles a little—puts out the porch light, locks the door, tiptoes upstairs . . . Ten minutes later, she's fast asleep—with the same drowsy little smile playing around her lips.

"Dick's snug and safe in a Pullman—all's well!"

Current Pullman ads carry copy of this nature: ". . . He has to be there at nine in the morning, on the dot and on his toes. So he takes a train. And sleeps while he goes, on a Pullman. Going by rail, you see, he's sure to get there, no matter what the weather."

Busy persons who are a part of the 24-hour production effort will be happy to learn that additional installments in the tender saga of Dick Hill and his cronies will be made available to AMERICAN AVIATION readers in summarized form.

Italics in the above episodes are courtesy of Pullman Co. and Young & Rubicam Inc., its ad agency.

TCA to Open Route

Trans-Canada Air Lines on Apr. 3 began familiarization flights from Moncton, N. B., to St. John's, Newfoundland, preparatory to opening regular service May 1. The TCA schedule will be four hours, compared with 54 hours by other means of transportation. Connections will be made at Moncton with planes for the U. S. and Canada.

Airlines Rank High Among Railroads in Passenger Revenues for 1941

Air Carriers Continue Steady Gain on Pullman

By LEONARD EISERER

THE MAJOR domestic airlines in 1941 maintained their ranking positions among the country's leading railroads in passenger revenues received, according to a study by AMERICAN AVIATION of official railroad reports to the Interstate Commerce Commission and official airline reports to the Civil Aeronautics Board.

This was accomplished despite wartime conditions which not only prevented the airlines from continuing their normal equipment expansion programs, but which brought a flood of additional traffic to railroads from troop movements and other special emergency travel.

Comparison of airline and railroad records shows (Table 1) that last year American Airlines, with a 30% increase over 1940, moved into 8th place among all the railroads in passenger revenue received. An increase of 21% over the previous year placed United Air Lines in the 12th spot among railroads and airlines in income from this source, while Eastern Air Lines, with a 31% increase, ranked 16th, and TWA, with a 29% gain, ranked 20th.

To illustrate the rapid progress made by the airlines toward overtaking the railroads in the passenger revenue category: just two

years earlier—in 1939—only two airlines ranked among the first 20 carriers in income from passenger traffic, with American placing 11th and United 17th. That year, Eastern was 23d and TWA 24th.

In 1940, the positions of these airlines were American 9th, United 11th, Eastern 16th, and TWA 19th.

How wartime conditions have boosted rail passenger revenues is seen in a comparison of figures for 1939, 1940 and 1941. For calendar year 1939, total passenger revenues received by the 16 leading Class I rail carriers (including Pullman Co.) amounted to \$365,585,000.

This figure for the 16 top railroads dropped approximately 1% to \$362,249,000 in peacetime 1940, only to climb 20% to \$435,425,000 last year when war preparations were underway in earnest and troop traffic swung sharply upwards.

During the same three-year period the four largest airlines increased their aggregate passenger income in spectacular fashion, despite the loss of planes transferred to the U. S. and British governments for military transport service.

Aggregate passenger revenues of American, United, Eastern and TWA climbed 49% from \$28,939,000 in 1939, to \$43,221,000 in 1940, and jumped another 28% last year to \$55,458,000.

Gaining on Pullman

Further indication of steady airline progress in the competition for passenger traffic is reflected in the trend of airline and Pullman Co. revenue passenger miles operated since 1935.

As shown in accompanying Table 2, revenue passenger miles flown in 1935 by the entire domestic air transport industry totaled 279,375,-

(Turn to page 35)

A Columnist 'Rides' the Rails

CHARGES that U. S. railroads are not meeting their new emergency with much intelligence and that their "service is worse than the food," were made Apr. 2 by Helen Essary, columnist for the Washington Times-Herald.

"Isn't it possible that the railroads deserved the slump they got into?" she asks. "Now they are rushed with business they are not prepared to handle. Perhaps if they had been more efficient, more obliging in the past, busses and planes wouldn't have found profits so easy to make."

The columnist relates of the instance when a "slick streamliner slid apologetically into Durham, N. C., four hours and a half late. The streamliner hadn't been delayed by troop trains. It had simply run out of oil 40 miles north of New Orleans. Some employee had forgotten to check the fuel gauge!

"Passengers noticed the tank registered empty while they were waiting for a steam engine to tow the streamliner to the nearest filling station."

Criticizing the food, the writer says: "It is badly cooked, unappetizingly presented and expensive. The service is worse than the food."

"The conductor on a recent train from Palm Beach could give us no information about making connections with Charlotte, N. C. He said his run stopped at Charleston, S. C."

"He didn't know what happened after that. Various porters gave advice which sent us miles and hours out of our way. Later, a railroad official explained the inefficiency:

"They only know what they are paid to know."

Airline and Railroad Leaders in Passenger Revenues

Table 1

Below are ranked the 15 leading passenger railroads, the Pullman Co., and the major airlines in order of passenger revenues received in calendar 1941, 1940, and 1939.

1941 Rank		1941 Pass. Rev.	1940 Pass. Rev.	1940 Rank	1939 Pass. Rev.	1939 Rank
1.	Pennsylvania	\$89,023,000	\$71,623,000	1	\$71,107,000	1
2.	New York Central	66,610,000	59,322,000	2	61,413,000	2
3.	Pullman Co.	64,548,000*	57,962,000*	3	58,523,000*	3
4.	N. Y. New Haven & Hartford	30,849,000	26,342,000	4	27,382,000	4
5.	Southern Pacific	26,556,000	20,872,000	5	22,520,000	5
6.	Santa Fe	22,786,000	18,493,000	6	18,278,000	6
7.	Union Pacific	21,554,000	17,473,000	7	17,631,000	7
8.	AMERICAN AIRLINES	20,780,000	15,898,000	8	10,712,000	11
9.	Long Island	16,532,000	16,327,000	9	17,562,000	8
10.	Southern	14,233,000	9,178,000	14	8,754,000	14
11.	Baltimore & Ohio	13,861,000	10,619,000	12	10,856,000	10
12.	UNITED AIR LINES	13,411,000	11,065,000	11	7,561,000	17
13.	Chicago & North Western	12,916,000	11,628,000	10	11,493,000	9
14.	Atlantic Coast Line	11,818,000	7,864,000	20	6,506,000	18
15.	Illinois Central	11,491,000	9,211,000	13	8,808,000	13
16.	EASTERN AIR LINES	11,027,000	8,371,000	16	5,523,000	23
17.	Seaboard Air Line	11,026,000	7,526,000	21	6,313,000	22
18.	Rock Island	10,925,000	8,271,000	17	7,690,000	16
19.	Chicago, Burlington & Quincy	10,697,000	8,964,000	15	9,168,000	12
20.	TWA	10,240,000	7,887,000	19	5,143,000	24

* Represents total revenues from sleeping car operations, including berths, seats, and charter services, but excluding commensal services.

Congress Okays Bill for 31,070 Planes

Senate Rejects 6% Profit Ceiling 'Rider'

By KATHERINE E. JOHNSON

THE SENATE has passed and returned to the House with amendments the 19-billion-dollar Sixth Supplemental Appropriation for 1942 carrying \$8,515,861,251 for the Army Air Corps, \$464,827,500 for the Navy Bureau of Aeronautics, \$7,009,720 for CAA, \$3,500,000 for NACA, and \$20,000,000 in contract authorizations for access roads to defense plants.

The Senate struck out the flat 6% profit limitation amendment of the House, rejected the "sliding scale" formula (graduating profit limits from 10% on the first \$100,000 to 2% on all above \$50,000,000) of the Senate sub-committee, and accepted an administration-sponsored modification.

This authorizes the Secretaries of War and Navy and the Chairman of the Maritime Commission to "withhold from the contractor any amount of the contract price which is deemed . . . to represent excessive profits."

Overhaul Promised

The government could reopen contracts for re-negotiation and sue if necessary for recovery of excess payments. Salaries and bonuses "in excess of a reasonable amount would not be allowed." Senate leaders promised, though, a thorough overhaul in conference of profits control plans.

The Army Air Corps allocation brings to a total of \$21,209,173,725 Army aviation appropriations since the first of the year. As a first airplane expansion step in realizing the President's plan for 60,000 planes for 1942 and 125,000 planes for 1943, the Fourth Supplemental provided \$12,525,872,474 for 33,000 planes complete with ordnance.

The Fifth Supplemental provided the Air Corps with \$167,440,000, none of which, however, was for planes.

The Sixth Supplemental, as the second step in realizing the goal in airpower expansion provides for 31,070 additional planes.

According to Army officials, these supplemental appropriations will leave the Army Air Corps short only 23,550 planes in reaching the 148,000 the Army is charged with procuring in the President's two-year program.

The Sixth Supplemental will bring Navy Bureau of Aeronautics appropriations since the first of the year to a total of \$6,314,281,470. The 1943 Navy Appropriation (available



The B-17E is Heavily Fortified
New Feature is the Power Turret Beneath Fuselage

in 1942) designated \$5,844,281,470 to the Bureau and provided for procurement of 23,354 planes. The present appropriation sets aside \$7,750,000 for special types of aircraft for the Navy. The major item, though (roundly \$215,000,000 of the \$464,827,500 allocation), is for expansion of aviation manufacturing facilities.

Increase for CAA

The Senate increase of \$4,080,000 over the House-approved figure of \$2,929,720, for CAA in the bill will provide for the establishment of automatic air traffic control boards in Washington and New York. The original two million was for enforcement of safety regulations, construction and operation of air navigation facilities, and for a program of re-identification of approximately 160,000 civil air pilots.

The CAA appropriation in the 1943 Commerce Dept. bill, already passed in the House and now pending with the Senate Appropriations Committee, is \$65,098,000—\$36,000,000 of which is for the CPT program.

The \$3,500,000 supplemental appropriation for NACA is for the Aircraft Engine Research Laboratory in Cleveland, especially for construction of a wind tunnel which will enable testing of high-altitude aircraft. The NACA appropriation carried in the Independent Offices bill for 1943, passed in the House and now pending with the Senate Appropriations Committee, is \$15,018,328.



A Flying Fortress Operating in the Middle East
'She Has No Vices,' Commented One of the RAF Pilots

Sites Chosen for 15 New Civilian Contract Schools

CONSTRUCTION contracts have been authorized for 15 new Air Force schools costing \$80,000,000 according to the War Dept. Texas allotted nine of the schools, which will cost \$5,000,000 each.

Schools will be constructed at Texas at Amarillo, Big Spring, Eagle Pass, Greenville, Houston, Lubbock, Pecos, San Angelo, Waco. Florida schools will be located at Apalachicola and Marianna. Other sites are Blytheville, Arkansas; Carlsbad, N. M.; Madison, Wis.; Monroe, La., and Sioux Falls, S. D. No details as to operation of the schools were made public.

Since all primary flight training for the Army Air Forces is now handled by civilian schools under contract to the War Dept., a large number of new civilian contract flight schools still remain to be brought into the military training program to maintain an even flow of trainees.

The civilian contract schools, getting their trainees largely from CPTP, which is being more than doubled to meet Air Corps needs, will feed their graduates into present military flight schools, as well as the new one on which construction is now being started.

Thus, a sizeable expansion of the Army civilian contract school network is expected to be announced within the next few weeks.

Reorganized Command

Reorganization of the Technical Training Command of the Army Air Forces, including establishment of four command Districts, has been announced by the War Dept.

Maj. Gen. Walter R. Weaver, who served as acting chief of the Air Corps prior to the general Army reorganization, effective Mar. 9, has been named commanding general of the Technical Training Command. Command Headquarters will be shifted from Tulsa, Okla., to Knottwood Field, N. C., Apr. 16.

The Tulsa location will be maintained as headquarters for the Technical Training Command District No. 3 under the command of Maj. Gen. Jacob E. Fickel, who has been in command of the Fourth Air Force.

District No. 1 will be headed by Brig. Gen. John C. McDonnell who has been commanding general of the Interceptor Command, First Air Force.

Brig. Gen. Arnold N. Krogstad, who has been commanding general of the First Air Force, will head District No. 2.

Commanding general of District No. 4 will be Maj. Gen. John E. Curry, who has been in command of the Civil Air Patrol.



SPEED

... as essential in the plant as in the air

Streaking through the skies, today's aircraft fly at almost incredible speeds. But to win the war—America must do more than make *faster* 'planes. It must *make* them faster. Production lines must back up fighting lines. Industry *must* produce more. It *will* produce more. At McDonnell, we are proud to be a part of our nation's great war effort. Our workmen, designers, and engineers are straining plant capacities to present limits, in the production of *precision-built* aircraft and parts for our armed forces.

MCDONNELL AIRCRAFT CORPORATION

LAMBERT FIELD ☆ SAINT LOUIS

Army-Navy News

New Five-Unit Airborne Command Will Streamline Army Ground Forces

CREATION of an Airborne Command of the Army Ground Forces commanded by Col. William C. Lee, at Ft. Bragg, N. C., is the latest step in the growing importance of airpower in the Army according to the War Dept.

Five units of the Army Ground Forces already have been assigned to this command and further immediate expansion is planned which will include training centers at Ft. Bragg, N. C., and Ft. Benning, Ga.

One of the most important activities of the new command will be the use of glider units. These units will be made available from the Army Air Forces for special training under the Airborne Command.

The immediate concern of the command will be formulation and development of tactical and training doctrine, development and standardization of material and equipment, and changes in the tables of organization and tables of basic allowances.

Lee, who previously commanded the Provisional Parachute Group at Ft. Benning, Ga., is a pioneer in parachuting operations.

As established, the new command comprises the following units: Headquarters and Headquarters Company, Airborne Command, Ft. Benning, Ga.; 502nd Parachute Infantry Regiment, Ft. Benning, Ga.; 503rd Parachute Infantry Regiment, (less the 3rd battalion), Ft. Bragg, N. C.; 504th Parachute Infantry Regiment (to be organized) and the 88th Infantry Airborne Battalion, Ft. Benning, Ga.

Blimp Base Ready Soon

The new \$6,000,000 Navy blimp base at Elizabeth City, N. C., which was recently dedicated, is being rushed to completion, Navy Dept. officials state. Barracks for 400 men, an administration building, storehouses and a partially completed blimp hangar complete the complement.

Although Navy Dept. spokesmen state the base will be used as a link in the anti-sub chain, airship experts point out that it will be possible to fly blimps from the new base to Bermuda, if necessary.

More Air Admirals?

The belief that more aviation admirals will be put into service with the fleet in the Pacific was expressed recently by Rear Adm. J. H. Towers, Chief of the Bureau of Aeronautics, before the House Appropriations Committee.

"It is obvious that this war in the Pacific will be largely an aviation war, and I am sure that they will

put a higher percentage of aviation admirals into active service with the fleet than they have had heretofore," he said.

The Navy Dept. has requested that there be no limitation placed in the estimate of the budget to the number of officers above the rank of captain who may draw flight pay arising from their assignment to duty involving flying.

Towers pointed to the fact that there was a limitation put on for the fiscal year of 23 officers, and whether the Navy will reach that figure in this fiscal year or not depends on the plans of Adm. King regarding the fleet.

He added, "We certainly will not assign more than required, and we are requesting that the limitation be raised for the fiscal year of 1942."

New Pilot Centers

Opening of Naval Pilot induction centers at the University of North Carolina, Chapel Hill, N. C., and University of Iowa, at Ames, on May 28, is announced. Similar centers were opened at the University of Georgia, Athens, Ga., and at St. Mary's College, Moraga, Cal., on June 11, the Navy Dept. has announced.

Ginsburgh With SOS

Gen. George C. Marshall has designated Col. A. Robert Ginsburgh director of information and public relations for the Service of Supply. His new position will be similar to that which he recently held in the Branch of Industrial Information.



Insignia: 'West to east with the greatest possible speed' is the meaning of the insignia of the Air Corps Ferrying Command which now appears on the first of five TWA Stratoliners to go into foreign courier service. Jack Frye, TWA president (left), and L. G. Fritz, vice-president (right), wish Capt. Otis Bryan (center) happy landings before the latter takes off on a foreign mission.

3 New Naval Air Bases

U. S. Naval Reserve aviation bases have been established at Memphis, Tenn., Norman, Okla., and Peru, Ind., to provide additional facilities for student flyers in the Navy's program to train 30,000 pilots annually. Each base will have facilities for preliminary flight training, including barracks, administration building, flying field, hangars and outlying fields.

The new facilities will bring to a total of 18 the number of U. S. Naval Reserve aviation bases.

No New Appointments

"Although an average of more than 1,500 individual applications are being received daily by the Army Specialist Corps, no appointments can be made until regulations are approved and funds appropriated for its operation," War Dept. states.

Louisiana School Opens

Opening of Shreveport Aeronautical Institute, Shreveport, La., has been announced by K. E. Sherman, general manager. Courses in drafting, junior engineering, lofting, riveting, and sheet metal are being offered. J. T. Stevenson is chief technical director and J. Owen Evans will be in charge of junior engineering and lofting.

Army-Navy Personnel

Recalled to active duty, Maj. Gen. James E. Fechet, one of the Army's pioneer aviators and second Chief of the Army Air Corps, will be assigned to duty at Army Air Forces Headquarters, Washington. Retired in 1931 at his own request, Fechet started flight training as a 40-year-old cavalry captain and rose to commanding officer at Kelly Field, Tex.—on his way up to Chief of the Air Corps which he attained in 1927.

Controlling and directing all transportation matters pertaining to the Army Air Forces will be the new job of Charles F. Nielsen, according to announcement by Lt. Gen. H. H. Arnold. Nielsen was recently given an indefinite leave of absence from Lockheed and Vega. (See photo on page 20). Several months ago he was selected as traffic consultant to the Office of Defense Transportation, OEM. He is a member of numerous national boards and committees on transportation matters, including the Aircraft Traffic Association, National Industrial Traffic League and the Aircraft War Traffic Conference.

Olds Replaced

By Col. George
As Ferry Chief

COL. Harold L. George, formerly with the War Plans Division, has been placed in charge of the Army Air Forces Ferrying Command, replacing Brig. Gen. Robert Olds, who was transferred to an unannounced assignment, the War Dept. announced Apr. 7.

The change culminated months of sharp criticism by manufacturers who asserted that accidents had risen rapidly since the Command took over deliveries from aircraft company pilots who previously had flown new planes to the coasts.

During the Command's existence since its organization in June 1940, it continued to grow until it is conducting operations on a larger scale than the civil airlines, the announcement stated. Created to speed delivery of aircraft to Britain, the Command's scope was expanded to include flights to the Netherlands East Indies, Russia, China, and other beneficiaries of the Lend-Lease Act.

Pilots have been drawn from three principal groups, Army flying school graduates, Reserve officer pilots, and civilian pilots. Extensive changes are anticipated in the Command's operations in the near future.

Navy Section Perfects New Polaroid Goggles for Better Night Vision

PLASTIC polaroid goggles, designed to precondition the eyes of pilots to adequate night vision, have been perfected after eight months of experiment by the medical research section of the Bureau of Aeronautics, the Navy Dept. has announced.

The goggle frame embodies a basic new design of one-piece molded sponge rubber. It is a single aperture type with interchangeable lenses providing unobstructed vision for both eyes without the usual nosepiece or hinge device.

A standardized unit, it can be manufactured at one-sixth the cost of the present type goggles, which require a quantity of metal, leather, rubber, and cloth fitted with individually-ground lenses. The weight of the new goggle, complete with lens and headband, is two and one-half ounces, including one and one-half ounces of reclaimed rubber.

Equipped with the dark-adaptation lens, this goggle is believed to be the answer to the long-existing need, felt particularly by men and pilots on aircraft carriers and lookout positions, for a quick method of adapting their vision to darkness.

The principle upon which the dark-adaptation goggle works involves a special lens which allows practically no light to stimulate the portion of the retina used in night vision. Without stimulation, that part of the retina becomes dark-adapted almost as rapidly as it would in complete darkness.



The Birdmen's Perch

We're willing to bet plenty that Frank Baker will never take up a plane again without a thorough inspection. We're willing to bet that you won't either after you've read his Funnyboner. Can you top it?

Major Al Williams, alias "Tattered Wing Tips" Gulf Aviation Products Manager, Gulf Bldg., Pittsburgh, Pa.

FUNNYBONER DEPT.

Dear Sir:

If this story doesn't teach a lesson, it's funnier than even I think it is. One morning back in 1938 I went out to the field to get in some practice flying. At that time I'd had only about 12 hour's solo. I climbed into the rear cockpit of the ship I was given, warmed her up a while, and headed for the extreme end of the field so that I could

utilize the full length of the runway. I swung into the wind, gunned the plane, and started to roll.

After a short run I got off. I had gained just about enough altitude to level off for more speed when the control stick came completely out of the socket into my hand!!!

I was still over the field but getting awfully goshdarned close to the lower end when I cut the gun. The tabs were set right and using only rudder control I managed to make a perfect landing. As soon as I hit ground I kicked a whole mess of right rudder and just missed ramming the fence. I climbed into the front seat then, and taxied back to the hangar to have the rear stick secured.

Apparently some one had taken out the back stick while hopping passengers and when he had replaced it, had failed to put the pin back securely. In taxiing, it had shaken sufficiently loose to come clean out the first time there was any pull on it.

Well, I was back in the air doing 720s within fifteen minutes but, honest Major, I don't take anything for granted any more!

Yours truly,
Frank Baker,
Nashville, Tenn.

SHOVEL OFF THE BUSTLE, JOE!

It pays to be dissatisfied as plane designers have proven time and again. Latest proof is an absolutely tailless aircraft. Two prop drive shaft housings are the only outer surfaces on the plane which do not directly contribute to lift (!).

Plane designers apparently design a ship to carry twice as much twice as far as any other ship. And twice as fast. Then they begin to brood over its probable performance. They become dejected. By the time the ship is rolled out for tests,



they've gone off somewhere to draw up a job that will perform THREE times as well!

Our research men here at Gulf are pretty much like that, too. They weren't satisfied with the usual methods of refining oil. They wanted Gulfpride to be a better lubricant than any other sold. Even



though they worked with the finest crudes obtainable, they wanted to get more of the impurities out. So they developed the special Alchlor Process which does just that! It gets MORE of the carbon-and-sludge makers out of Gulfpride and you get BETTER performance out of your power plant. That's why so many of the top pilots are dissatisfied with anything but Gulfpride Oil.

THIS MONTH'S BRAIN TWISTER!

An air school has a field one mile square. There is a hangar at each corner of the field. After receiving a government contract, they decide to enlarge the field.



They decide to make it twice as big. The manager of the field, however, wants to retain the shape of the field and also

wants to avoid moving the hangars. How can he keep the field square, double its size, and keep the hangars in their original positions?

THIS MONTH'S WHOPPER

Dear T!W!T!

I'm being sued, I'm out of work, I'm up to my neck in trouble because of you. The only trade I know is auto racing and I've been banned from every track in the country.

It all started with a tin-lizzie derby back in Gogebic County. I took the family "T," knocked the fenders off, straightened the frame, and put new tires on the relic. I poured some Gulf Aviation Gas into the tank and entered the race without even a test run.

I got started, kicked the pedals—and the bands burned out! I got a whiff of the smoke and it made me so mad I advanced the spark all the way. WHOOOSH!—the engine cover and dash board hit me in the face!

Well, strip my gears and call me shiftless if I didn't win that race with only the frame, engine, and me! You see, the fan pulled me around the track.

I bought an adjustable steel fan and started to win races all over the country. That rig handled as sweet as any front-wheel drive made. To stop, I'd just reverse the fan pitch and hang on.

But up on the Ramsey track I dredged such a deep hole that the grandstand fell in. Next time around I saw what I'd done and slammed the fan into reverse to stop. Dang thing tore up all the track in front of me and blew it onto the people in the ditch, near burying them.

I never saw such hostile citizens! I'm hiding out up here until the whole thing blows over.

Windy Lindy
alias, Alden Allen
Minneapolis, Minn.

Gulf Oil Corporation and Gulf Refining Company . . . makers of



OIL IS AMMUNITION



USE IT WISELY!



Atwood Defends U. S. Air Service Officers

Public Opinion Delayed Planes, Official Says

AMERICA'S belated awakening to the significance of airpower was due to the stubborn refusal of its public to take military matters seriously and demand appropriations from Congress for fighting planes, J. L. Atwood, vice-president and general manager of North American Aviation Inc., told members of the American Society of Mechanical Engineers at Houston, Tex., Mar. 24.

Asserting that he based his opinion on years of experience with top Army and Navy officials, Atwood praised the work of the services and declared it is time their labors and those of the aircraft industry itself are seen in their "true perspective."



Atwood

We are making progress, despite the heartbreaking problems which must be overcome in building up an industry by 10,000% in less than five years, he said.

"If we take a basic view of our position in aircraft manufacturing, the fact that we have an airplane industry at all and have maintained it when there was no tank industry or gun industry tells something of a story in itself.

"It is the fashion to say that the generals and admirals did not accept the theory of air power and that consequently we are at a military disadvantage. This is certainly a superficial and incorrect point of view and is only another result of our past national unwillingness to take military matters seriously. The truth of the matter is that, though their advice was often disregarded and their budget estimates reduced, the tactical thinking of our armed forces has been progressive, and in proportion to the funds appropriated the Army and Navy put considerable emphasis on the airplane and were far advanced in the theories and practice of its use. Dive bombing and intensive ground attack were taught in our tactical schools for many years.

"It is equally fashionable to say that naval ships are obsolete since the advent of bombing and torpedo planes. Our high command is not likely to be stampeded by such ideas. Although aircraft have put many restrictions on the operation

Just Cold Analytical Planning

"PRESENT national problems are military, industrial and strategic, and cold analytical planning is needed. Too often when we need a plan we are offered a committee; when we need material we are offered morale; and when we need unity we are offered the closed shop.

"As the farmer accepts the hail and the frost, so we must accept a few well meaning meddlers and a few screams of 'sabotage' when we must momentarily reduce our schedules to fit in with supplies available."—J. L. Atwood, in his address at Houston, Tex., Mar. 24.

of surface vessels, so did coast defense guns, floating mines and submarines. We are working toward a balanced Navy wherein aircraft will fulfill every role of which they are capable. It would be well to consider in its true perspective the part played by the Army and Navy as well as the aircraft industry in their joint effort to make the United States dominant in the air," Atwood said.

"So far, the fact that we have an industry is due almost entirely to the Army and Navy," the speaker said.

"At the same time that the aircraft designers were striving to improve aircraft the Army and Navy were building their own technical organizations of officer and civilian personnel in the services. The policy has been extremely fortunate in that a considerable number of particularly suitable regular Army and Navy officers were educated in aeronautical engineering and permitted to remain on this type of duty over a period of years.

"There is now a fine group of highly trained specialist officers on flying status who are very familiar with the aircraft industry and administer the matters pertaining to airplane design and construction with a high degree of intelligence and assurance. They have built up inspection standards which are unexcelled and which are the underlying reason for the high standards of workmanship and reliability of American aircraft. In fact these

standards have been so good and so universally accepted by the aeronautical industry that the Army and Navy are now able to cut considerable red tape and eliminate much inspection. The standards are so well established that the aircraft factories could not deviate appreciably if they tried, without a conscious effort to change production habits.

Primary Function

"A primary function of the air services has been to set up type specifications for new airplanes and equipment. These specifications have been of great importance inasmuch as they must set forth desired characteristics for designers to work toward without being so restrictive as to prevent the incorporation of new design features. A nice balance has been maintained in this regard and the type specifications have pointed the way effectively for the designers.

"There has been, however, a lot of fuzzy thinking in many quarters about airplane production. One fallacy was the thought that the aircraft industry had never been anointed with the magic oil of high production and therefore should come hat in hand to the shrine of the production line in Detroit, kneel and receive the accolade, and then retire to its drafting boards and wind tunnels. This has led to a form of controversy which cannot be completely resolved and is not particularly constructive because no

one knows all the answers. The automobile industry has certainly contributed much more to manufacturing methods in general than the aircraft industry but I think the point is that airplane designers have known that for many years and have acted accordingly. Year after year the aircraft people have studied the methods used in manufacturing automobiles, refrigerators and radio sets and have adopted what they could as fast as possible and without false pride. It is a shame that this liaison was one-sided in the past.

"Few parts of airplanes will be built in such quantities as to justify special machines. Such machines are used for some engine propeller parts and a few other items, but most machining is done on fixtures in standard milling machines, turret lathes, drill presses, grinders and planers. No one has seriously suggested that machines cut faster in Michigan than they do in California. Nor have the possibilities of changing the technique of forging, casting, riveting, welding, bolting or assembling come in for much national attention except in the good old American reaction to an assembly line—'put a motor in it.' What has inflamed the imagination of the high production engineers, however, is what seems to them the unbelievable provincialism of the aircraft factories in using materials as rubber, zinc alloy, lead, wood, or various composites to make dies for forming sheet metal parts. Haven't they ever seen a fender, a turret top or a refrigerator body made in seven seconds or a seventh of a second or whatever it may be?

They Have Seen

"This is a natural first reaction but I am afraid it has been persisted in too long. The point is that the aircraft engineers have seen the fender, the turret top and the refrigerator body, and furthermore could obtain such dies anytime they wanted to. As a matter of fact they do have many such dies for parts where the quantity is high and a continuous supply of material is available.

"The cold fact is that only 3 1/2% of the labor hours in the average airplane are expended in forming sheet metal parts.

"Furthermore it is not possible to concede a reduction of manufacturing costs for our 3 1/2% sheet metal forming by use of matching steel dies on a double acting crank press. Actually the costs would be higher than present aircraft methods, even neglecting the large investment represented by the steel die, not only in money but in skilled labor. While aircraft orders are for large quantities these quantities seem small to a press operator.

"You can get plenty of free criticism of aircraft production on any street corner and some of it is probably justified. However, if any one says it is easy to build an organization or multiply an existing

(Turn to page 22)



Photo by Peter M. Bowers

Pursuit-Trainer: A late pursuit design, the North American P-64, is the Army's version of the standard export model NA-50, powered by a 950-hp. Wright Cyclone. These ships were in production for Thailand, but were taken over by the Army before completion of the contract. While carrying the "P" designation, the ship is used as an advanced trainer.



Timetable—for the **OFFENSE!**

CIVILIAN AMERICA is engaged in a supreme battle of production. There is no time for delaying actions—no time for defensive tactics. We have no choice but to attack with every man-hour, with every machine, with every ounce of energy and morale that we can bring to bear in this vast offensive drive.

We can't talk 60,000 airplanes into the blue for '42. They must be built minute by minute, part by part, through thousands of man-hours to final assembly. The job is big. Stakes are high, and time is short.

To Goodyear Aircraft has been assigned the task of producing

thousands upon thousands of sub-assemblies vital to America's air offensive. Our War Production Communique No. 1 might well read, "The President has set our goal. We must and will do better."

Goodyear's thirty years' experience in aeronautical engineer-

ing, its facilities, resources, man power are dedicated to the aircraft production offensive. Nor do we differ in this from our brothers-at-arms of the aircraft industry. To them we pledge increased production of parts and sub-assemblies that America may be first in the air—with 60,000 military airplanes—*this year!*



With Existing Facilities, Industry Could Jump Production 25-50%, Chamber Official Says

Shloss Reports On Inspection of 'Teeming' Plants

By LEON SLOSS

Manager, Information Dept., Aeronautical Chamber of Commerce

("Plane production: How's America doing?" This question is being asked by the world's millions daily. Many and conflicting replies have been heard. On the correct answer hangs the destiny of the world's millions. That makes the correct answer important. The writer has just traveled 8,000 miles seeking this answer in America's aircraft factories. Here is his report on what he saw. He contends you have to believe what you see.—Ed. Note.)

THE WRITER has seen, touched, peered at and stood by literally thousands of newly-built warplanes—very recently. The American aircraft industry is building hundreds of them every week.

Even now it is building enough of them, perhaps, to defeat the Axis in time, because history, including that of the current conflict, has recorded the superiority of American planes, and because American pilots are the best in the world.

The aircraft industry, which to date in World War II, has conceived and built every plane produced in this country, naturally does not intend to rest on today's production laurels. It has already doubled, tripled, quadrupled its



Leon Schloss

production of recent periods.

Production will be doubled, tripled, quadrupled again. Of this the writer can give assurance, because he has just seen the facilities, in being and coming rapidly into being, that will make it possible.

Taking only the facilities which exist today, the aircraft industry could increase its production from 25 to 50 per cent, were it not for certain temporary conditions that maintain through no fault of the industry.

That these facilities do exist today is a tribute to America's plane builders, whose "know how" in the unique business of constructing aircraft has enabled them to turn raw materials and accessories into completed aircraft faster than these things could be furnished.

Before proceeding, let's get one thing straight. The writer works for the aircraft industry, furnishing information, on request, to the press and other publicity media for inclusion in the continuing report to the American people on the progress of the war effort, the report of which the people so rightfully deserve.

The writer has had several years of newspaper experience, covering

Industry Exceeding WPB Schedules!

"I CAN TELL YOU that our aircraft plants are actually ahead of the schedules set up for them by the government," Col. John Jouett, president of the Aeronautical Chamber of Commerce, told a gathering in New York Mar. 25.

"They could do more in most cases. There is only one thing holding back the industry from greater production today. It is the lack of enough critical materials, parts and equipment.

"You recently have heard about WPB's campaign to stimulate production by inspiring management and labor to greater effort. In our case it was unnecessary.

"It isn't for us to tell the government that we should be allocated all the available supply of certain critical materials at the expense of those plants making ships, tanks and hundreds of other items of needed equipment. It is up to the government to decide which bottlenecks shall be broken and how materials should be distributed. We believe that this problem will be solved . . ."

Col. Jouett's statement followed that of WPB Chief Nelson revealing that combat aircraft production had increased 50% since Pearl Harbor.

aviation, which equipped him (he submits) with some measure of ability in observing and reporting aviation matters. In this article he is reporting exactly what he has seen and learned in recent weeks—just that, no more, no less.

The matter is not one which could be distorted. The physical facts exist, have been noted by impartial officials of the government. If you are skeptical—the right of every American and the commendable habit of every good newspaperman—ask your Congressman. He knows, particularly if he is a member of a War Effort Investigating Committee.

No Time to Waste

Every aircraft plant the writer inspected he found teeming with production. Countless thousands of workmen were "keeping 'em rolling." Management had no time for anything but trying to devise means to squeeze out an extra warplane or two. Assembly lines so long that the furthest planes were indistinguishable steadily spouted death-dealing flying machines.

In every plant, he was told that offers had been made to step up production immediately. The offers had been rejected. The plane builders naturally were disappointed, but in no single instance was one resentful or critical.

"No one is to blame," one official explained. "Everybody in every industry is pretty much in the same boat. The war production program is so vast that there simply is not enough raw material to go around. We plane builders have gotten ahead of the supply of raw materials and accessories.

"Our suppliers of such things as castings and forgings will catch up with us and the raw material bottleneck will be broken, as new aluminum, magnesium and other

mills started only a few months ago come into production. Then wait us roll.

"Meanwhile, the government must decide how many planes it wants, how many tanks, how many ships—and which it wants first. We can build as many planes as are called for; if we are given the material, we can even build the 60,000 planes asked by President Roosevelt in 1942—if we are given the material."

The writer wants to see the plane builders "roll." Production beyond that of today will be something unprecedented in American industrial annals as today's production is in relation to anything that has gone before.

Management is not alone in enthusiasm, its accomplishments. The workmen, the men and women in the shops, on the assembly lines are performing their duties as soldiers in a great industrial army with patriotic fervor. Every plant has a honor roll of former craftsmen who are now in the armed services. Some of these have been killed in action. Their buddies in uniform are not forgetting that. They are mad.

They Resent Visitors

They actually resent visitors, because they get in the way, hold up the job. These Americans need no stimulation to greater effort. All they need is materials, pieces and parts which seem to disappear into a cavernous maw as the workers slam them into warplanes, but carefully, with attention to detail, and consideration for the fate of the pilot and crew who soon will be slamming those warplanes at the enemy. Here are a few samples of worker morale in the aircraft industry:

(Turn to page 25)



Hundreds of Engineers Draft Lockheed Designs
Board Arrangement Permits Rapid Changing of Location

WRIGHT WILL POWER THE TONNAGE OF THE AIR



Gangplank TO THE AIR AGE

Aircraft engines are moving the world into the Air Age. Around powerplants now on the way will be built the giant transports of tomorrow. "Flying daycoaches", with the comforts of air travel, will cut time and distance for everyone. Wright's unsurpassed research and production facilities will supply the power for these sky-giants of the future.

WRIGHT *Aircraft Engines*



Curtiss C-46 and P-40s fabricated with Boots Self-Locking Nuts

HOW BOOTS NUTS HELP CURTISS "Keep 'Em Flying"

Keeping planes *in the air* is what counts today. Frequent repairs mean hours lost on the ground—and consequently a less effective fighting power.

To help turn costly repair hours into easy check-overs, Curtiss uses Boots Self-Locking Nuts. These longer lived fasteners reduce maintenance time because they need not be replaced. They are permanent—literally, they "outlast the plane."

In addition, Curtiss reduces weight on its new

Cargo ship, the C-46 . . . and in one application, saves two precious assembly hours per pursuit plane because these Self-Locking Nuts, being all-metal, can withstand the intense heat necessary to bake the enamel on the tail surfaces of the famous Curtiss P-40.

The Boots Aircraft Nut is the only all-metal, one-piece self-locking nut to pass the rigid tests of the Army, Navy, and Civil Aeronautics Authority.

Self-Locking Nuts for



application in all industries

Cutaway of Boots Anchor Nut with dimpled rivet holes

BOOTS

AIRCRAFT NUT CORPORATION

NEW CANAAN, CONNECTICUT

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Eight Pacific Coast Mfrs. Form New Research, Information Pool

Group Pledges Aid in Speeding Warplane Output

EIGHT major Pacific Coast aircraft manufacturers announced Apr. 6 the organization of the Aircraft War Production Council Inc. to serve as a research and information agency, for interchange of information among the manufacturers, and for pooling of facilities, plans, practices, and data for the general purpose of speeding warplane production.

Regarded as a cooperative move of considerable significance, the council has been incorporated in Sacramento, Cal., by the secretary of state.

Member companies are: Consolidated, Douglas, Lockheed, North American, Northrop, Ryan, Vega, and Vultee, comprising the bulk of the airframe manufacturers in the southern California area.

The announcement said the council "will coordinate and extend the established practice of the individual companies in exchanging information and pooling facilities—which already has made a major contribution to increased production. The object of the council is to speed the victory of the U. S. and her Allies."

National in Scope

The member group comprises an imposing number of bomber, fighter, trainer and troop transport manufacturers and it was stated that all inland branch plants of the member companies would be included in the council activities. By so doing the council virtually becomes a national organization.

The presidents of the companies made public a telegram to War Production Board chief Donald Nelson offering their joint services as "a regional planning, coordinating and advisory committee on aircraft production problems to assist you and the armed services further."

Articles of incorporation of the council, a non-profit corporation, stated its functions, including facilities, to:

"Serve as a research and information agency for members of the corporation and for aircraft manufacturers in general, in cooperation with the armed services and agencies of national, state and local governments.

"Provide facilities for free and unrestricted interchange of information among the aircraft manufacturers, in the interests of ex-

Council Members Volunteer

Text of the telegram to War Production Board Chairman Donald Nelson from the new Aircraft War Production Council Inc., sent Apr. 6, reads:

"The aircraft manufacturers, now devoting their full resources and energies to war production, stand ready for further service to the nation and to you. The undersigned are members of the Aircraft War Production Council Inc., a coordinating agency of a group of major Pacific Coast aircraft builders. These companies, through combined resources and free and unrestricted interchange of ideas and information in the past, have greatly contributed to the record of aircraft production recently made public by you.

"We hereby volunteer for duty as a regional planning, coordinating and advisory committee on aircraft production problems. We want, in this way, to further assist you and the armed services.

"We believe such joint action by aircraft executives will give the War Production Board, the Army and the Navy, the benefit of combined years of experience and pooled facilities, without interrupting in any key plant the management continuity so vital to your program. We as a committee stand ready to serve."

Signed: Harry Woodhead, president, Consolidated Aircraft Corp.
Donald W. Douglas, president, Douglas Aircraft Co.
Robert E. Gross, president, Lockheed Aircraft Corp.
J. H. Kindelberger, president, North American Aviation Inc.
LaMotte T. Cohu, chairman of the board, Northrop Aircraft Inc.
T. Claude Ryan, president, Ryan Aeronautical Co.
Courtlandt S. Gross, president, Vega Airplane Co.
Richard W. Millar, president, Vultee Aircraft Inc.

panded and coordinated war production efforts.

"Encourage and expedite the pooling of facilities, plans, practices and data contributing to increased management and employee efficiency, and the maximum production of military airplanes."

Headquarters of the council have been established at 7046 Hollywood Blvd., Los Angeles, with John C. Lee as manager. Lee until recently devoted a portion of his time to the Aviation News Committee of the Aeronautical Chamber of Commerce until the removal of the center of activity for this committee to Washington a few weeks ago.

The announcement said:

"In thus volunteering for further service, the aircraft executives advanced another step in their long-established program of interchanging information, plans and procedures in the interests of expanded and coordinated war production. Aircraft manufacturers pioneered the unique industrial practice of pooling individual company facilities, in the interests of greater production of better airplanes for the nation."

\$67,000 to Red Cross

DOUGLAS AIRCRAFT CO. employees at Long Beach, Santa Monica, and El Segundo, Cal., have presented the American Red Cross a record check for more than \$67,000.



Nimble Fingers Fly Over Wires, Soldering Irons

In a survey conducted by AMERICAN AVIATION, it has been found that while some aircraft plants are still handling the situation gingerly, others are plunging in with training programs covering a goodly part of all production operations. "Everything but heavy lifting" was the way one enthusiastic super put it.

Can Women 'Take Over'?

Vultee reports 1,750 women in the factory are now using drill presses, punch presses, riveters and other mechanical devices. Grumman proudly points to its nucleus of six women welders as the first to be used in an aviation plant in the East. They are only the beginning of a real influx, for the company's expressed policy is to hire women wherever they can be used.

Lockheed-Vega says, "Draw 'em a picture and they can't go wrong." As a result of placing women workers on the electrical assembly line, Vega production has been tripled on such items as electrical control panels, bomber control panels, junction boxes and instrument panels to be installed in Flying Fortresses and Vega Ventura bombers.

In the electrical assembly department, long lines of women work at benches, each doing a definite job and then passing the work along to the next girl in line for a later operation. Nimble fingers fly over wires and soldering irons, while keen eyes follow a series of charts that have been pasted on plywood and shellacked.

Jobs Women Can Handle

What are women workers best fitted for in present day assembly programs?

Aircraft executives who have inducted women into active production work say that after short training periods they can carry on two-thirds to three-fourths of the drilling, reaming, spot-facing and counter sinking of parts such as flanges, nuts, clamps and bearings. They can do spot welding and machine work including grinding.

When specifically trained for riveting, they can handle at least 25% of the jobs on fuselage assembly. They should be able to perform about 35% of the work on wings and almost 70% of that on control surfaces.

Naturally they are peculiarly well fitted for work that requires

(Turn to page 18)

Women

(Continued from page 1)

Industry leaders contend that now is the time when the fast approaching dilemma must be solved, not merely by talk but through concrete action.

A variety of remedial expedients and ideas have been presented and discussed by the administration, the Department of Labor, the War Production Board, labor union leaders, and newspaper columnists out of which some basic plan for recruiting or drafting manpower will probably be evolved. However, reports from every section indicate that rather than wait for these groups to function, executives in the aircraft industry are taking immediate practical steps to anticipate personnel difficulties. Not least among these is the reassuring surge toward employment of women workers.

Close to 20,000 women are working in aircraft plants now, with more thousands in allied fields, as well as great numbers of others undergoing basic training. These are looked upon as the vanguard of scores of thousands to come. For it is freely predicted that by this time next year, 30% to 50% of all aircraft workers will be women. If that seems too large a proportion, personnel authorities advise a check with Germany and Great Britain aircraft manufacturers where the figures range upwards from 60%.

Parts Firms Seek Tax Aid For Expansion

Executives Ask Growth Without Financial Ruin

By JAMES L. STRAIGHT
West Coast Editor

THE PRESENT dire plight of the aircraft parts and accessory manufacturing industry, which is finally receiving official but ineffective Washington attention, barely precedes what close observers expect will be the worst bottleneck in the entire war production effort.

The need for rapid expansion in this "small business" portion of aircraft production (as distinguished from other "small business" programs) is just beginning to be officially recognized. While the diagnosis is still incomplete, and came very near being an obituary, there is yet time for treatment.

While Defense Plant Corp. has administered more than a billion dollars of loans and advances to the prime aircraft manufacturers and larger Washington-represented parts and accessory makers, the thousands of smaller plants have stood still.

Here are antidotes suggested for this inertia by leading west coast executives of small but essential suppliers to the aircraft industry:

● 1. Outright federal aid (with a minimum of red tape and time consumption, and no trips to Washington) must be made available for plant and tooling expansion right down to the machine shops and processors. This does not mean loans. Recent appointment of regional DPC officers is a step forward.

● 2. Some effort should be started to correct the inequitable effect of excess profits taxes on an established defense plant as compared with a "converted" plant having a large peacetime earnings record upon which to claim exemptions.

● 3. By Congressional resolution, WPB should be given authority to void application of the excess profits tax in certain instances where such tax burden is preventing expansion. This could be done by issuing an appropriate certificate to defense industries which have recently or are being urged to expand their war production facilities.

● 4. DPC should immediately buy up all idle tools in unconverted plants, and in shops having inexperienced management or a single line of tools which are idle because they can't and never will be able to do a defense job. These tools would be made available to established, experienced defense plants.

Following the recent Truman study there has been a deluge of

Plea for WPB Action

THE excess profits tax is shown here as one of the barriers to vitally needed expansion of war industry because it is designed to recapture most of any profit in excess of peacetime earnings.

In accomplishing its original purpose of lopping off excessive wartime profits, the tax unfortunately discourages production increases and new plant investment.

The suggestion is made here that Congress empower WPB to issue certificates to war plants wherever expansion is necessary. Possessing such a certificate, the plant could expand and buy additional tools, and then use the receipts or evidence of such investment in lieu of cash to pay next year's excess profits tax. Thus the problem of amortizing a plant investment which has little or no value except in wartime would be met—at the same time circumventing red tape now involved in DPC's financial assistance to plants.

If aircraft parts and accessory makers are to avoid the worst bottleneck of the war effort, there is no time for more red tape.

Congressional concern for these small businesses which provide the big airplane plants with much of their life-blood. Bills and resolutions are piling up for their succor, mostly in the way of loans.

A hundred million dollars is being made available for such lending or the financing of plant expansion. WPB has broadcast a letter inquiring as to the financial condition and needs of each small businessman in aircraft work.

It Falls Flat

But the loan plan and all such inquiries about individual financial condition and credit will fall flat. The WPB letter will get few responses, and there will be fewer applications for loans. It is all accepted in the industry as well-intended but childishly beside the point. Also, the individual plant owner would be afraid of being called unpatriotic if he really tried to explain his present inertia.

The trouble is too fundamental to be so easily cured. It concerns

the facts of life, which the small businessman has learned he must keep in mind to survive, regardless of new economic theories or the temptations of pyramided borrowing.

One of these "facts of life," the plant owner believes, is that his first patriotic duty is to stay in business. He must remain, if only to the extent of his present facilities, in a solvent productive position. If he wants to do this, he says, he can't consider expanding.

Even present taxes, he offers to prove, are enough to prevent his expanding, no matter how much additional business or additional income might thus be assured. Why, he asks, should he invest money in an additional turret lathe which will be worthless the instant the war is over, only to have the government immediately take 80% or 90% of whatever additional profit that lathe might earn? How can he hope to pay both the tax bill and the bill for the new lathe?

His is not a question of credit, as a rule. The established, experienced

aircraft parts or accessory manufacturer, who is obviously the logical person to whom the management of needed expansion somehow be entrusted, is not a fly-by-night without credit at home. In fact one of his current troubles is that he's still borrowing, and will be borrowing more in 1943, to finish paying federal and state taxes on business done in 1941.

One producer, eager to multiply production of some 200 vital proprietary items if someone can later explain to his stockholders why he led them into bankruptcy, submitted the following view of today's stalemate:

"The ABC Co. started business Apr. 1, 1938, with a capitalization of \$300,000 and has since built up surplus accounts to bring its total invested capital to \$555,000. During the fiscal year ended Apr. 1, 1942, it showed a profit on vital defense items of \$343,339 before income and excess-profits taxes, on gross sales of \$2,540,000. Income and excess-profits taxes for the year amount to \$214,625 figured on the invested capital basis, leaving a net profit of \$128,714.

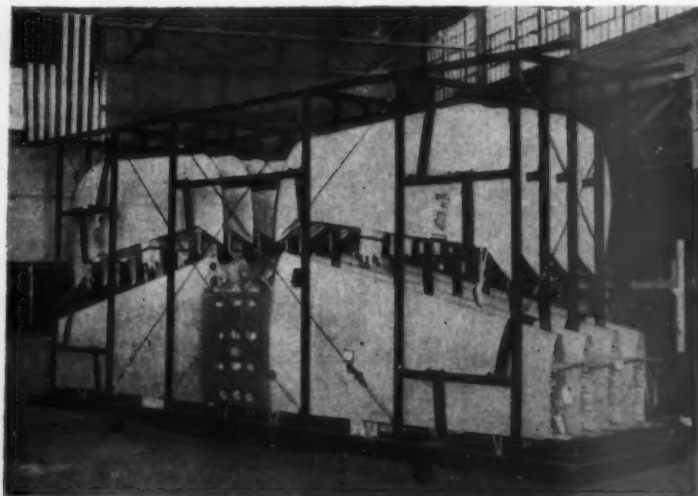
Profit Requirement

"No cash reserve has been set aside for taxes as all cash profits have been used for additional plant expansion; hence, this year's taxes will have to be paid from next year's profits. In order that this company may next year accumulate cash requirements to pay both the current and next year's taxes, profits will have to reach \$59,665 per month or \$716,000 for the year. This would require the company to do a volume of business of \$5,300,000, which is far in excess of its capacity.

"Should the excess profits and corporation income taxes be increased to 80%, this company, operating on a capital invested basis, would have to show a \$40,000 per month profit until June 1, 1944, in order to accumulate cash requirements for taxes up to that date. The only alternative left is for this company to reduce inventories and pay taxes from inventory reductions, thus cutting defense production.

"Had this company been in a commercial business three years previous to the enactment of the excess-profits law doing one-third of its present business, it would have had an exemption of approximately \$110,000; under the invested capital basis it has an exemption of only \$49,000. Hence, those companies which are now being converted from a commercial business to one of defense have a great advantage over those new defense industries managed by men who have over the past years been developing toward defense needs and who have within the last few years organized companies to manufacture vital defense tools.

"Many companies organized years prior to the enactment of the excess-profits law (Turn to page 25)



Bomber Parts Carefully Packed for Shipment
Fisher Body Develops Method to Insure Safe Transport

THE RED CROSS

needs the financial aid of every American.



Contribute today through your Local Chapter.

Be as generous as your circumstances permit.

THIS SPACE CONTRIBUTED BY THE B G CORPORATION

CIO Reveals Ford Contract Provision

Union Claims Document Sets New Pattern

WILL the Ford Bomber plant contract with UAW-CIO, hailed by union leaders as a wage structure that should "set the pattern for the entire aircraft industry," actually establish a wage rate precedent throughout the industry in all parts of the country?

UAW-CIO officials make the emphatic statement that it will. "Wages established for the Willow Run plant through our recent negotiations are far above the rest of the aircraft industry, which has always lagged far behind the automobile industry," asserts Richard T. Leonard, director of the union's Ford division. "The wages range from 95c to \$1.60 an hour."

With pay scales throughout the aircraft industry far from being standardized, and with wage ultimatums certain to be part and parcel of contract renewals this year, the details of this accomplished high wage agreement become ominously significant.

Contract Released

What are the facts? AMERICAN AVIATION has obtained the full text of the agreement. It appears in two parts: a general contract which is the same as that covering all other Ford Motor Co. employees in the United States, and a special wage agreement for the employees of the Willow Run aircraft plant.

Highlighted in the general agreement are these important features:

Union shop, continuing condition of employment being maintenance in good standing in the union; check-off, dues collections from pay; the CIO grievance procedure; seniority status, with itemized preferential seniority for union workers; lay-off methods, providing definitely for a 32 hour week before any lay-offs of other than employees with no seniority; wages guaranteed to be as high as those paid by the major competitor in the auto, cement, glass, steel or tire industries, with the specification that any workers receiving in excess of such rates would not be reduced; hours, including 5c additional for shift workers, time-and-a-half for over eight hours a day or 40 hours a week, and double-time for Sundays and designated holidays.

Agreement is made that there will be no strikes, picketing, sit-down or other curtailment or restriction of production until the grievance procedure has been followed. The Company agrees there shall be no lockouts and no rotation of shifts. Provisions of the contract apply to all employees "without discrimina-

tion on account of race, color, national origin, or creed."

The second, recently signed agreement determines wages to be paid in the bomber plant. According to Leonard, "The wage rates in the bomber plant are based on the rates for the same or comparable operations in automobile manufacturing as established by the union in Ford plants. Those occupations in aircraft which are the same as in automobile manufacturing are auto-

matically paid Rouge rates in the Bomber Plant." (This is undoubtedly the most significant feature of the agreement.)

On job classifications for specific aircraft work and so not directly comparable to occupations in automobile production, a schedule of wage rates is indicated for each group, under the two general headings of assembly occupations and manufacturing occupations. As an indication of what these comprise,

the following are taken at random:

Assembly occupations: Assembly major \$1.15; Cleaner inside \$1.05; Electrical man for check \$1.25; Hydraulic man for test \$1.25; Paint mixers \$1.20; Routers \$1.15; Sign painter \$1.30-\$1.35.

Random selections from Manufacturing Occupations include: Automatic screw machine operator and set-up, \$1.20-\$1.30; Bender machine operator on channels \$1.20-\$1.35; Cable splicing \$1.20-\$1.35; Cleaner House \$1.05-\$1.15; Die-setter, bench press \$1.25; Excello thread grinder \$1.20-\$1.35; Milling machine \$1.20-\$1.35; Power hammer operator \$1.20-\$1.35; Router operator \$1.20; Spot welder \$1.15; Tool machine operator \$1.20-\$1.35; Welding \$1.25.

"The agreement also includes a training program which we (UAW-CIO) believe will become a model for other defense manufacturers to follow."

Trainee Terms

Under the terms of the training program, new men get 75c. On employees or all after 100 hours receive 90c; after 200 hours \$1.10; after 400 hours on welding \$1.20; and after 600 hours on welding \$1.25.

Those who pass the riveting examination successfully are paid \$1.15. Welding trainees who complete 600 hours are rated at \$1.20. Welding instruction includes the different types such as arc, acetylene, gas, etc. on such metals as aluminum, chrome, monel metal and stainless steel.

"In view of the anticipated employment at the bomber plant of approximately 15,000 women workers, it was agreed that women workers shall receive the same wages as men when they perform the same operations. This provision is unique in the aircraft industry. The company has further agreed not to discriminate in hiring women workers because of race, color or nationality."

All employees hired on an occupation by a flat rate are hired at a rate 10c below the full rate. This is increased by 5c after four weeks and an additional 5c after eight weeks.

Comparison of these arrangements and figures with present aircraft contracts may not prove pleasant reading. Nevertheless, as an indication of wage trends they can hardly be ignored.

On the other hand, legislative action at Washington may set ceilings on wages and effect new overtime hours and payments before contracts come up for renewal. That at least is the optimistic viewpoint.

First Willow Run Plane Next Month?

FORD MOTOR CO.'s plant at Willow Run will "undoubtedly" go into production of heavy bombers at least a month or two earlier than originally planned, it was revealed on Apr. 7 by WPB Chairman Donald Nelson. He said he expected the first plane to come off the assembly line before the end of next month.

On the Labor Front

ALUMINUM COMPANY OF AMERICA, Pittsburgh, Pa.

Closed hearings have been started over demands of National Association of Die Workers, CIO, for increased wages and union status in 9 Alcoa plants. At Cleveland plant, NWLB special investigator William E. Baldwin ordered discharge of four union shop stewards accused of fostering slowdown practices. Union officials approved. Settlement has been effected in bonus demands and crew sizes at Cleveland, but other issues remain open.

BELLANCA AIRCRAFT CORP., New Castle, Del.

CIO claims contracts have been signed, increasing wages to CIO standards, and assuring union shop and check-off.

BELLINGHAM PLYWOOD CORP., Bellingham, Wash.

NLRB has ordered an election held for collective bargaining representation among production and maintenance employees.

BENDIX AVIATION CORP., South Bend, Ind.

NLRB has certified Pattern Makers League of North America (AFL) as bargaining agent at the Bendix Products Division.

BROWNE & SHARPE MANUFACTURING CO., Providence, R. I.

Dispute concerning wage increases, union security, paid holidays, paid vacations and weekend overtime has been certified to NWLB. 7600 workers are involved.

CORNELL DUBILIZER CONDENSER CORP., S. Plainfield, N. J.

Secretary Perkins has certified case to NWLB; 2200 workers seek clarification of the issues of union representation, grievance machinery and wage rates.

CURTIS-WRIGHT AIRPLANE DIVISION, Buffalo, N. Y.

After disestablishment of The Aircraft, unaffiliated union, CIO is conducting drive for membership election, and makes claim that former officers of the Aircraft are influencing workers toward AFL. In meantime, IAM-AFL has issued industrial union charter and states a "vigorous organization drive will be instituted at once."

WRIGHT AERONAUTICAL CORP., at Paterson, N. J.

Wright Aeronautical Employees Association, independent union, states that five Wright plants in Paterson area will refuse to waive premium pay for Sunday and holiday work. This union is prevented from dealing with the company pending settlement of a CIO charge of company domination. At the same time, CIO reports president and nine other officials of the independent union have resigned and joined CIO.

GENERAL MOTORS CORP., Detroit, Mich.

Negotiation on \$1 day increase and other demands has been speeded up to three meetings a week. A definite decision is not expected before the dispute is sent back to NWLB. In the meeting between C. E. Wilson, president of G. M. and Walter Reuther no point of agreement was reached.

HOLEY CARBURETOR CO., Detroit, Mich.

A new wage agreement has been made with CIO, featuring maintenance of membership, grievance procedure including arbitration, wage increase from 5c to 20c per hour retroactive to November 7, and cost of living bonus to be paid monthly. Minimum rate for production workers with over five months' service is set at \$1.08.

NOORDUYN AVIATION LTD., Montreal, Que.

Answering union complaints about the plant not working Good Friday and Saturday, R. B. C. Noorduyn, general manager, pointed out that essential work would be continued but on other hand the firm did not feel justified in paying three and a half days' pay for two days' work. Replying to further requests for all-out production, he stated that the day shift was as large as available space permitted, and night shift was being expanded rapidly as possible. When completed, a three shift plan would be considered.

SOLAR AIRCRAFT CO., San Diego, Cal.

A new agreement is announced with Solar Employees Association providing for no strikes or lockouts during the war. Disputes are to be settled by arbitration with arbitrator's decision final. Wages will be kept in line with those in aircraft industry throughout southern California. Agreement is timed to expire 90 days after Armistice.

SPERRY GYROSCOPE CO. INC., Brooklyn, N. Y.

Hearings are being held in New York by NWLB mediator, T. F. Neblett. No agreement has been reached. The case will probably be referred to the full Board.

THOMPSON PRODUCTS INC., Cleveland, O.

Although a contract has been signed with Automotive and Aircraft Workers Alliance, Inc., (independent), providing a 7c wage increase, CIO reports a drive in three plants; "a substantial amount of workers have signed authorization cards and an election has been petitioned for."

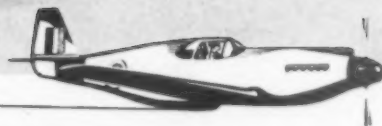
WESTERN ELECTRIC CO., Kearney, N. J.

Division making airplane radio equipment was threatened by strike. Secretary Perkins certified the case to NWLB. Strike was canceled.

IN R.A.F. SERVICE



Mustangs



ARE "BUCKING" INTO THE
JOB OF DEFENDING BRITAIN

NORTH AMERICAN AVIATION, INC.

Inglewood, Calif.

Women

(Continued from page 13)

manual dexterity and precision handling. In his report to stockholders, Tom Girdler recently stated, "It has been found that women take a serious interest in their work and even excel men in some forms of the more intricate and painstaking operations."

In instrument plants, the proportion of women workers is already up around the 50% mark. They are being used in larger and larger numbers on aircraft instruments, where they have been found capable of swinging into at least 75% of the work. In addition, women have been found to be highly satisfactory for testing processes, inspection and checking when upgraded from instrument assembly operation.

Curtiss-Wright's Propeller Division has several hundred women grinding gears, burring nuts and doing many other jobs requiring accuracy and precision. In this plant it was found that inspecting and assembling small metal parts seemed to be a natural with them, whereas it had always been a difficult job classification to fill satisfactorily with men.

According to a Curtiss-Wright official, "from the tool crib where they hand out drills, to the machine shop where they handle the tools, women have been equal to the men in all the jobs to which they have been assigned."

Bell Adds 100

Women workers are not limited to small precision duties. At Bell Aircraft Corp., 100 new women employees have been added during the past two weeks, the first group of many to be hired immediately. They are doing their part to make the famous Airacobra.

Other women are working directly on a Ford assembly line, the first women to do so since Henry Ford built his first motor car. What is more, they are handling the work so competently that Ford executives predict that upwards of 25,000 will be on the production payroll at the new Willow Run bomber plant, where incidentally, they receive the same wage rates as men for comparable or similar jobs.

Logan Miller, general superintendent of the Ford plant, appears immensely pleased with the way the women have adapted themselves to the work. He points out their sincere interest in learning how to fit into their jobs, declaring that they make far better students on the average than men who attend the training classes. Women were formerly restricted in Ford plants to wiring jobs but are now turned loose, after careful training, on some of the most important production assemblies.

"They apply themselves more energetically than our men and they are quicker to grasp the things they learn," Miller said. "We find that they can do any work that does not put an excessive tax on their physical endurance. They are es-

pecially good at light riveting, inspection work and assembly jobs."

Glenn L. Martin expresses his approval of women workers at the Martin plant near Baltimore. "In anticipation of the increasing manpower requirements of the Armed Services, the company has successfully introduced a large number of women into its manufacturing departments. This field of development will be continued and enlarged."

Mr. Martin quotes another excellent reason for the employment of women: that by using them the company can maintain its large percentage, at present 80%, of employees resident in the Baltimore area, and thus avoid many of the problems arising from the employment of non-local residents.

Management Problems?

In actual experience many of the difficulties attached to having women engaged in what had customarily been considered men's jobs, anticipated by executives, have failed to materialize.

In some states for instance, local laws had prohibited employment of women in odd shifts. However this is being rapidly changed to conform with war-time requirements.

In California, for instance, the Industrial Welfare Commission has issued an order permitting women to work in night shifts in aircraft plants at the same wage paid men. Changes in the State's labor laws governing women employees removes the time-and-a-half requirements for the 11 P.M. to 6 A.M. shift and gives all workers uniform wages.

"They may not undercut men as to wages and we will expect hot food and drink will be available at the lunch period and transportation available when they finish their shift," the commission chairman explained.

The supply of women, felt to be inadequate at one time, seems al-



Working Widow: The widow of Capt. Colin P. Kelly, who says "I much prefer working in a factory where materials vital to aircraft are made," has gone to work as a stenographer. She is pictured with H. Ray Ellinwood, president of Adel Precision Products Corp.



Lockheed Aircraft Photo

Sex is No Slowdown Males Are Not Distracted

most limitless right now. The Department of Labor estimates that nearly 6,000,000 women can be recruited for work at once if necessary. This includes more than 1,000,000 unemployed or readily available women from converted or curtailed non-war industries; 700,000 women between 16 and 24 now attending school; and 2,000,000 more and upwards now listed as housekeepers or sales people.

Some firms in the aircraft industry have insisted upon women workers having an industrial background, either of experience or training. On the other hand, many concerns like Ford have taken on college graduates, waitresses, sales clerks, models, and similar types who have never before worked in a manufacturing plant.

Training Necessary

Training is, of course, necessary before they can become mechanically minded or skilled, even for routine tasks. Curtiss-Wright stipulates that every woman worker must be a graduate of an intensive six weeks' course at a nearby vocational school where they take classes in machine shop science, mathematics, blueprints, and machine tools. "They're good if they survive that," said an official.

Ernest Hoisington, general foreman of the riveting school at the Ford plant, finds women eager to learn. "They feel they are in here more or less on trial and that it is up to them to prove they can make good," he says. "Only two or three of the first 100 girls trained in riveting have failed to make the grade."

However, in line with the increased demand for women as workers, training programs are to be stepped up considerably. A nationwide investigation conducted by the University of California's bureau of public affairs finds that for every six men receiving production training, only one woman is getting such instruction.

The question of sex attraction and its possible influence upon slowing down schedules seems to have been much overrated in preliminary consideration of the employment of women side-by-side with men workers.

Superintendents who have been asked whether women in production lines have tended to take men's minds off their work are in agreement that there has been no disruption of any kind.

At the Ford plant, as in others, the women work in slacks and the company is planning a uniform slack

Women to Design Chic Airplanes

WELL, GIRLS, shall we put flared wings on this one with pleated propellers or do you think a pink propeller with more of an upswing to the undercarriage would be more chic?

Yes, aircraft will now be really stylish because women, God bless them, will soon be dictating what the well-dressed airplane will wear.

University of California officials have disclosed that the first class for women in aircraft engineering drawing ever conducted at San Diego has been started with an initial enrollment of 30 former college coeds with previous training in mathematics and science.

While in St. Louis, Mo., Washington University, "to cope with the increasing number of pretty faces and streamline forms appearing in the shop, engineering and inspection departments at Curtiss-Wright," has added a special course entitled "Introduction to Aeronautics for Women." Instructors in the course are E. E. Blount, F. S. Gais, and M. N. Pack of the Curtiss-Wright engineering department.

Not content with contributing to all-out war production in mere factory jobs, San Diego women have launched an offensive into the white-collar realm of the aircraft industry.

Typical among the potential draftswomen is Miss Marietta Elton, who left San Diego State College last month after two years' instruction to seek a place in one of the expanding industries. She and others had educational qualifications that pointed them for better than factory positions.

Twelve weeks' intensive training not only in drafting but in aircraft nomenclature and materials, elementary mechanics and descriptive geometry will be given the women to qualify them for jobs in aircraft engineering departments.

suit designed for all of them. "We are trying to bring in a uniform with no sex appeal," said Miller "we want to keep that out of the picture entirely."

How do women stack up as workers? Lt. Col. Joseph F. Batley, chief of the labor division of the Office of the Undersecretary of War, says: "Women can fill many types of jobs not only as well, but better than men. In many types of activity women can be substituted for men with relatively little difficulty."

To bear him out, a recent survey of California plants by the California department of employment showed that in every plant where women were employed, there was an increase in production of work per hour.

Chamber Office Moved

The west coast office of the Aero-nautical Chamber of Commerce is now located in room 703 in the Hollywood Professional Bldg., 706 Hollywood Blvd., Hollywood, Cal., effective Apr. 1. Telephone number was changed to Hempstead 5187.



THE POWER OF MINUTES- AND MEN



THE MEANING of minutes in these crucial days was presented with trip-hammer impact by Donald Nelson in a recent War Production Board broadcast.

Thirty-six hours' production, he said, can equip an entire regiment with machine guns.

At present production rates, it was stated, the nation can produce an anti-aircraft gun in 30 minutes! A tank in 12 minutes! An airplane in 8 minutes!

Vividly, in terms of Victory-winning war machines, the crying need for saving time and more time was brought home with grim force.

And, in cold clarity, the time-saving function of the nation's airlines is spotlighted as a life-saving necessity.

Airlines' key personnel, vested by long experience with skills in their specialized tasks, are making use of these skills to save extra hours for Democracy's defenders.

Reservations experts save days for war-mission passengers by finding space on preferred schedules, devising alternate routings.

From traffic figures, statisticians learn where airplane seats can be of greatest use to military and industrial leaders.

Other men work out on paper the current schedule needs, plotting peak service to meet peak demand.

Maintenance and operations experts put paper schedules into mechanical performance. They keep planes at peak efficiency—in the air a maximum of hours.

What is the meaning of minutes saved by skilled airline operation?

Mountains of machines of war which weigh heavily in the balance scale of battles won and lost!

TRANSCONTINENTAL & WESTERN AIR, INC.



Manufacturing Personalities in the News



M. C. FLETCHER F. P. FLETCHER

Important officials of Fletcher Aviation Corp. at Pasadena, Cal., are Maurice C. Fletcher, secretary-treasurer and sales manager, and Frank P. Fletcher, vice president of production. The firm also operates Fletcher Aircraft Schools in Burbank, specializing in industrial production training. M. C. Fletcher is business manager of the school, F. P. Fletcher is vice president.



BUDWIG COMBS WILSON

Officials of Aircraft Components Inc., Van Nuys, Cal., inspect some of the company's aluminum fuel tanks. Gilbert G. Budwig is president; J. N. Combs is secretary-treasurer; and Kenneth J. Wilson is contract coordinator. The firm fabricates stainless steel exhaust collectors, exhaust shrouds, fire walls, ammunition boxes, tail cones, aluminum tanks, cowlings, seats, junction boxes.



B. M. SMARR G. M. WILLIAMS

Has been appointed director of purchases attached to Aviation Corp.'s operations staff at the Detroit divisional office, it was announced by William F. Wise, executive vice president.

Chairman and president of Russell Manufacturing Co., Middletown, Conn., has been elected a director, vice chairman of the board and member of the executive committee of Vultee Aircraft Inc.



J. C. SHAW

Has joined Young Radiator Co., Racine, Wis., to head engineering work of the firm's enlarged Aircraft Products Division, under the direct supervision of J. J. Hilt, vice president.



WULFEKUHLER



CAMPBELL



BROWNE



NIELSEN

Lockheed Aircraft Corp. personnel changes have been announced as follows: Louis W. Wulfekuhler has been elected secretary. H. R. Campbell, manager of the finance department, was elected assistant treasurer. Dudley E. Browne, formerly chief accountant, is now comptroller, a newly created post. Charles F. Nielsen, general traffic manager for Lockheed and Vega, has been named director of traffic and transportation for the U. S. Army Air Forces.



ROBERT A. WICKES

Formerly with American Anode Inc., B. F. Goodrich Co. subsidiary, has been named secretary-treasurer of American Bosch Corp., Springfield, Mass., succeeding Carl C. Francis, resigned.



PUFFER



REEVES



C. W. SMITH



DAVISON



C. E. SMITH

Three General Electric Co. engineers have been honored by the company for outstanding accomplishment in the development of the turbosupercharger. They are: S. R. Puffer, designing engineer of the turbosupercharger department; Waverly A. Reeves, who took part in original altitude tests; and Dr. C. W. Smith, technical supervisor of the supercharger department.

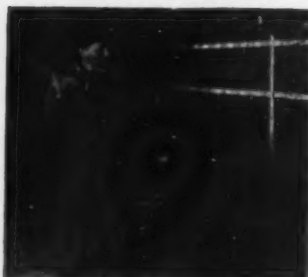
New appointments by Aeronca Aircraft Corp., Middletown, O., involve Robert L. Davison and Charles E. Smith. Davison, formerly regional representative was named sales manager for the firm. He will be in charge of all CPT and CAP sales and will handle Army coordinations. Smith was promoted from assistant sales manager to Army liaison officer. Aeronca is building the L-58 series for the Army.



DYCER

CREWS

Marion P. Crews, former CAA engineering chief, now Dayton representative for Boeing Airplane Co., chats with Charles F. Dycer, head of CAA's flight engineering and factory inspection division.



HACK WILSON

Mighty slugger of the Chicago Cubs and one-time challenger to Babe Ruth's home-run title, is now on the Glenn L. Martin defense line.

John Oimsted Jr. has joined the Buffalo flight test section of Curtiss-Wright Corp.'s Airplane Division. He learned to operate multi-engine planes at Boeing School of Aeronautics.



OLMSTED

Watch
Northrop



NORDIC NORTHROPS

These are veterans of the skies above the seas—Northrop N3-PB's. For many months these Northrops piloted by valiant Vikings of the Norwegian Naval Air Force have been tracking, attacking, sinking enemy raiders—helping maintain the vital life lines of the

democracies—avenging the plight of Norway.

Yet these death-dealing Patrol Bombers, fastest military seaplanes in the world, are but forerunners of a steady, ever-increasing stream of faster, more powerful Northrop air fighters already *in production and in development.*

NORTHROP AIRCRAFT, INC. IS AN INDEPENDENT ORGANIZATION



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NORTHROP AIRCRAFT, INC. • NORTHROP FIELD, HAWTHORNE, CALIFORNIA, U.S.A. • CABLE "NORAIR"

Personnel in the News

William E. Boeing, who founded Boeing Aircraft Co. more than a quarter century ago, has offered his services for the duration to the company he once headed. **P. G. Johnson**, Boeing president, has announced. Mr. Boeing retired from the chairmanship of the company eight years ago and has since maintained no connection with the business, neither he nor any member of his family having any present stock interest in the firm. He will remain disassociated but will act in an advisory and consulting capacity.

Fred W. Cederleaf, former works manager of Dodge Manufacturing Co., Mishawaka, Ind., has been named plant manager in charge of Detroit units of Republic Aircraft Products Division of Aviation Corp.

John A. Royall, formerly vice president of finance, Menasco Manufacturing Co., Burbank, Cal., has been elected president, succeeding **A. E. Shelton**, resigned.

J. B. Fenner, formerly assistant treasurer, has been elected treasurer of Electric Auto-Lite Co.

Harry T. Rowland, former sales manager of Glenn L. Martin Co., has been elected a vice president of the company. He will serve as assistant to the executive vice president, **Joseph T. Hartson**. Rowland became connected with the Martin company in 1936.

Alfred Marchev, who joined Republic Aviation Corp. in February as assistant to the president, has been elected a vice president of the corporation and was named assistant general manager by **Ralph S. Damon**, president. **Joseph L. Tierney Jr.** has joined Republic Aviation as assistant to Counsel **John J. Ryan**. **Arthur J. Kelly** has been promoted from maintenance manager to factory manager of Republic Aviation at Farmingdale, N. Y. In addition, **D. J. Drapeau**, former safety engineer, was named maintenance superintendent, and **G. T. Schmitt**, head of service, was appointed equipment maintenance superintendent.

Alan J. Pickering has been elected assistant treasurer of Republic Aviation Corp., Farmingdale, N. Y., it was announced by **Thomas Davis**, treasurer. Pickering has served as an assistant to Davis since joining the company in Sept. 1940.

George A. Meyrer has been appointed general manager of Republic Aviation Corp.'s new Indiana assembly plant.

J. D. Young has been named manager of pump sales, and **W. J. Wagner** has been appointed assistant to the president of Tuthill Pump Co., Chicago, it was announced by **G. B. Tuthill**, president.

S. J. Powell has begun duties as factory manager of Consolidated Aircraft Corp.'s Ft. Worth division, it was announced by **George J. Newman**, vice president in charge of the Texas plant. Simultaneously, **H. S. Deichart**, former factory manager, was named assistant to Newman. **Glen Hotchkiss** was named assistant in charge of assembly-line operations.

Charles A. Lindbergh reported for work as a research engineer at the Willow Run bomber plant of Ford Motor Co. on Apr. 3, according to **Harry H. Bennett**, personnel manager of the company. It is expected that Lindbergh will be a consultant on construction programs arising out of the mass production of four-engine Consolidated bombers, scheduled to begin at the Willow Run plant soon.

Ray C. Sackett, formerly with Chrysler, Dodge, DeSoto, Plymouth, and Studebaker, has joined the headquarters staff of the Society of Automotive Engineers to assist in the SAE war program, reporting directly to SAE Secretary and General Manager **John A. C. Warner**. Sackett will have headquarters in the New Center Bldg., Detroit, and will devote particular attention to working with the SAE War Engineering board.

George W. Weeks has been appointed auditor of the head office of United Aircraft Corp. He became affiliated with Hamilton Standard Propellers Division of United Aircraft in the accounting department in 1936 and was transferred to the corporation's treasury department in 1939.

B. W. Clark, vice president in charge of Westinghouse Electric and Manufacturing Co.'s merchandising division, has been appointed vice president in charge of sales, succeeding **Ralph Kelly**, who resigned to become executive vice president of Baldwin Locomotive Works, it was announced by **George H. Bucher**, Westinghouse president.

Clarence J. Reese, president and general manager of Continental Motors Corp., has been elected to the board of Manhattan Bond Fund Inc. and New York Stocks Inc.

H. R. Campbell, who has been manager of Lockheed Aircraft Corp.'s finance department, has been elected assistant treasurer, and **R. P. King**, who has held a similar post under **Charles A. Barker Jr.** vice president and treasurer, will continue as assistant treasurer in charge of in-

surance. **J. R. Janssen**, assistant chief accountant, was appointed accountant to succeed **Dudley E. Browne**, Lockheed's new comptroller. **T. S. Rathman**, assistant manager, was appointed manager of the finance department, succeeding **Campbell**.

The following officers and directors were elected at the recent annual meeting of Romec Pump Co., Elyria, O.: Officers—**Ralph H. McQuat**, president; **Carl F. Shuler**, secretary-treasurer; **B. A. Schulze**, assistant secretary-assistant treasurer; **Walwin L. Davis**, chief engineer and production manager; **Leslie Hull**, Washington representative. Directors, in addition to McQuat and Shuler are—**Frank H. Grace**, **Henry Stecher**, **Charles D. Gentsch**, **A. B. Taylor**, and **Harry Gassman**.

E. A. Weisser is president of the newly formed supervisors' and men's council of Curtiss-Wright Corp.'s Propeller Division in Pennsylvania. Other officers are **Lou Deer**, vice president; **David McCann**, treasurer; and **Clyde N. Keller**, acting secretary.

W. T. Graham, factory manager of Fleetwings Inc., has been promoted to vice president in charge of manufacturing. **Charles L. Nielsen**, formerly assistant controller at Fleetwings, has been appointed secretary. **Dr. R. Giordano** has been named Fleetwings' plant physician.

Howell van Gerbig, a director of Fairchild Engine & Airplane Corp. since 1939, has resigned his directorship to devote his entire time to the corporation's Ranger Aircraft Engines Division as assistant to the general manager, **Duncan B. Cox**.

Turner Aeronautical Corp., Indianapolis, announces its officers as **Roscoe Turner**, president; **Ray P. Johnson**, vice president; and **Robert Turner**, treasurer.

William D. Strohmeier, sales production manager of Piper Aircraft Corp., Lock Haven, Pa., on leave for the duration, has joined the staff of Hawthorne School of Aeronautics, Orangeburg, S. C., an Air Corps contract school.

M. A. Seymour is now president of Cub Aircraft Ltd., Hamilton, Ontario, company reports. **Russell L. Gibson** is vice president and general manager, and **Melvyn Angus** is treasurer.



Royall

Rowland

Atwood

(Continued from page 8)

organization 10,000% and put advanced military airplanes in production you may be sure he never tried it. As General Knudsen once remarked, 'They never did it before but they are sure they can do it again.'

'Generally speaking everything is looking better for the long pull. America is beginning to understand war, the place of airpower in war and the part of the aircraft designer in air power.'

'The technical air officers of the Army and Navy and the managing groups in the aircraft factories have worked in close cooperation to a common objective. But in war nothing is good enough and certainly there is endless room for improvement in what we are doing and the way it is being done. The problems are tremendous. One of our worst deficiencies has been lack of practice. We had no China or Ethiopia or Spain or Poland in which to get practice, try out our airplanes or prove our theories. These deficiencies had to be made up and we can thank God for the recent close liaison with the British fighting officers and technicians who have placed their experience at our disposal. I do not think we will have to learn all these lessons over again the hard way.'

'Then, too, none of us have escaped the general American weaknesses and errors of the last few years.'

'In a spirit of honest American

realism we can recognize coolly the errors we have all made—and see above and beyond to the not distant day when supreme air power will reside where it belongs—in a nation that made airpower possible.

Kollsman Will Build in Glendale and Detroit

TWO CONTRACTS have been awarded for construction of buildings for Kollsman Instrument Division, Square D Co., to be erected in Glendale, Cal., and Detroit, Mich. A sales and service building will be erected for Kollsman at Glendale, Charles C. Crockett, manager of the California office, said.

A plant addition is to be constructed at Detroit to increase production of precision flight instruments and optical aircraft equipment. It will be a five-story concrete building which will cost approximately \$500,000. Machinery and equipment will cost in excess of \$200,000.

Kollsman plants are working 16 hours a day, seven days a week.

Parts Output Up

Hydraulic parts produced by Aircraft Accessories Corp. in its Burbank plant during Feb. 1942, showed a gain of nearly 700% over Feb. 1941, according to **R. C. Walker**, president.

The increase was achieved by the addition of a number of new machine tools, addition of a few thousand feet to the factory floor space and an increase of plant personnel of less than 100%. This increase was brought about without financial aid from the government.

PRODUCTION FOR ~~DEFENSE~~ WAR!

MEN NEEDED WHO CAN TAKE THE OFFENSIVE

CURTISS-WRIGHT TECHNICAL INSTITUTE

THIS TOWER OVERLOOKS AVIATION'S MOST DISTINGUISHED SCHOOL OF AERONAUTICS • FOUNDED IN 1921

Defense cannot win a war! In response to our President's demand, the aircraft industry is building 185,000 planes in two years for ATTACK to win ultimate victory. To do this, it must accept the services of thousands of men who have fallen into "defensive" single-phase jobs through cheap "quickie" courses. . . . But the men who fill the vital supervisory positions must be those with the intelligence and initiative to take the offensive — to obtain the thorough training that will enable them to serve their country most effectively on the production line and to make a career for themselves in aviation. The value of each man is largely determined by two factors: his sincerity in selecting aviation as his life work, and the ability and experience of those who train him for that career. Curtiss-Wright Technical Institute, under the personal supervision of Major C. C. Moseley, President since its inception and sole owner, is America's most distinguished school specializing in the training of Aeronautical Engineers and Master Aviation

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TECHNICAL INSTITUTE**
GRAND CENTRAL AIR TERMINAL
GLENDALE (LOS ANGELES) CALIF.

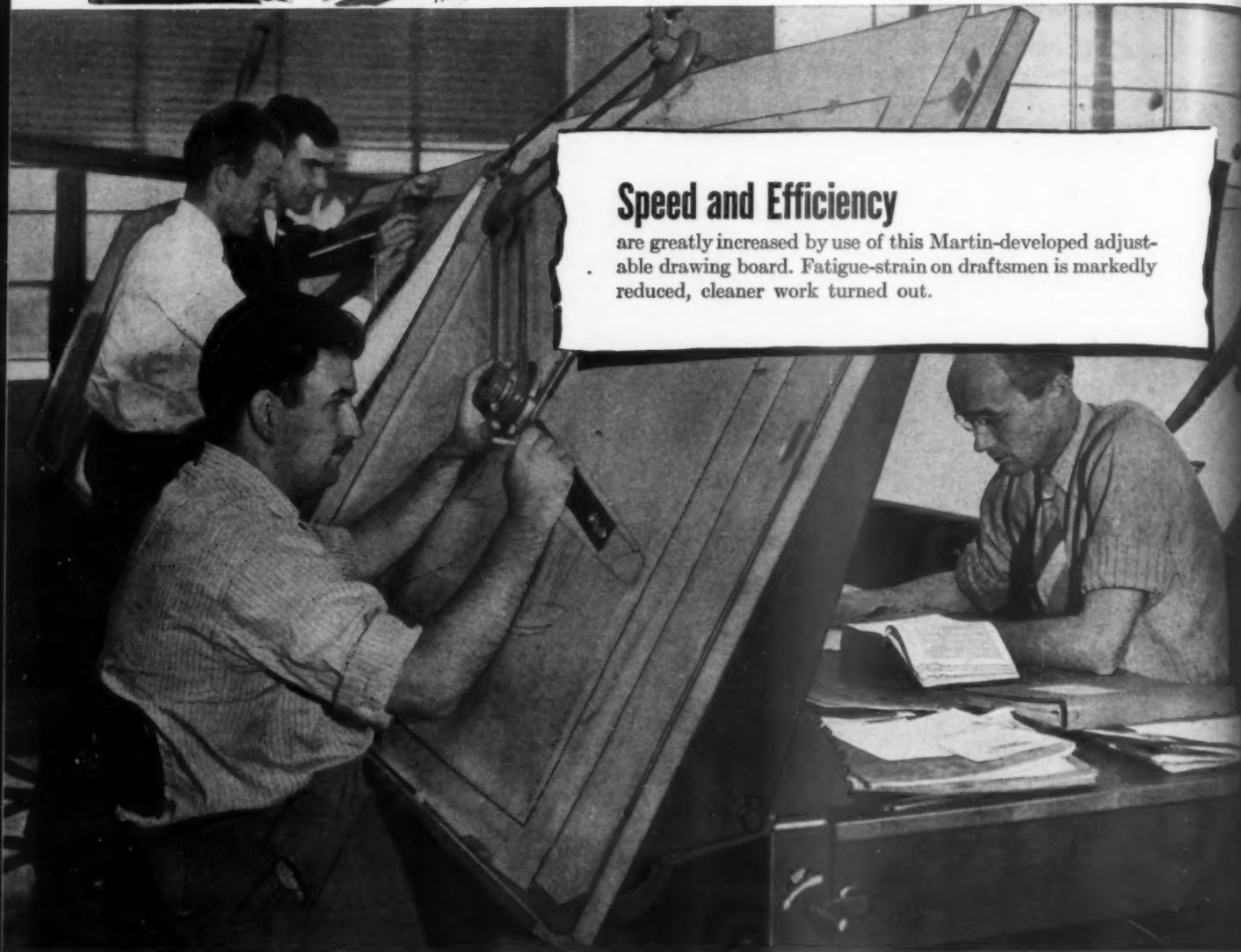
CONTRACTORS TO THE
U. S. Army Air Corps

Mechanics. Its standing in the industry is attested by its selection by Donald W. Douglas, President of the Douglas Aircraft Company, as the school for his own son's training. Its accumulated experience of many years in technical aeronautical instruction supplies the aviation industry with graduates thoroughly trained as supervisory personnel and is now being utilized in the National Defense Program by the U. S. Army Air Corps in the training of hundreds of enlisted men as Air Corps Mechanics, and its associated organizations, Cal-Aero Flight Academy, Mira Loma Flight Academy and Polaris Flight Academy, are extending primary and basic training to Flying Cadets of the U. S. Army Air Corps and the Royal Air Force. With a proved and tested curriculum and unsurpassed faculty of practical engineers and technicians, we take great pride in filling the industry's call for men "trained to precise order" . . . the career men on whom aviation's future depends.



Back-Breaking Work

was the order of the day for engineers and draftsmen using old-style, flat drawing boards. Perspiration and pencil dust hampered output.



Speed and Efficiency

are greatly increased by use of this Martin-developed adjustable drawing board. Fatigue-strain on draftsmen is markedly reduced, cleaner work turned out.

Less "Back-break" Per Bomber

Speeds Output of Martin Engineers

ENGINEERS and draftsmen, formerly resigned to uncomfortable hours bent over flat, table-like drawing boards, have found new ease, speed and efficiency through this Martin-developed tilt-top drafting board.

Designed by Martin engineers, this new drafting board is raised by a small crank to the proper level . . . adjusted to the desired angle by means of a horizontal bar beneath the edge of the table. As a result, Martin draftsmen are now able to sit down to their exacting work. The time and energy conserved, when multiplied by Martin's 1600 engineers, amounts to an impressive

figure in terms of the company's total engineering output.

These adjustable drawing boards are merely another step in the Martin drive for redoubled efficiency and speed. Every hour saved, every increase in production, is a vital factor in speeding Victory.

The Glenn L. Martin Company, Baltimore, Md., U. S. A.

Martin
AIRCRAFT

Builders of Dependable



Aircraft Since 1909

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Shloss

(Continued from page 10)

In one medium bomber plant, 15 foremen joined their workmen in overtime night work, for which none would accept pay, to turn out the first plane 17 days ahead of schedule.

In a heavy bomber plant, copies of a telegram from Washington, relating the success of one of the plant's planes in a smashing attack against the enemy, were made available to the workmen. They almost tore the roof off in the celebration which followed.

In a bomber-fighter plant, a large number of workmen eagerly undertook a special diet aimed at evolving a feeding routine for all employees which would induce greater worker-energy.

If possible, the women employees, the "Johnnie-come-latelys" of the aircraft plants, surpass the men in their devotion to duty, their tight-lipped attention to the matter of hastening the downfall of the aggressors. They were found in every plant visited, engaged in every phase of plane building, including final assembly. In most plants, they wear uniforms, proudly. Some of them are war widows.

Certain production operations, certain devices to wring extra production out of available materials stand out in retrospect. Examples:

- The powered assembly line at a four-engine bomber plant, stretching 3,000 feet in a vast horseshoe, with the mammoth, lightning-fast ships packed diagonally against each other, moving on railroad tracks from one assembly station to the next, finally to move into a huge, sun-drenched yard for testing, and then flyaway by keen-eyed ferrying pilots.

- There will be other powered assembly lines for four-engine bombers when the automobile industry gets into production. The one the writer saw was the first, created by an aircraft company.

- The "biggest room in the world" producing airplanes, medium bombers, a room so large that the far end disappeared in the haze of distance.

- The assembly line in a trainer plant, where my guide called attention to the four-digit production numbers on the trim planes, and remarked: "And some people say we're not producing."

- Half a dozen plants building other companies' planes, so that United Nations pilots can receive the equipment they need now—building them willingly. Engineers and production experts from the other companies just as willingly explaining the tricks of building their planes more quickly.

- Teamwork between the aircraft and automobile industry: in one bomber plant subassemblies from auto factories feeding in from a freight siding to form front and rear fuselage sections, while to one side aircraft employes built the complicated center-and-wings section, containing 2,500 parts itself, compared to about 175 in an automobile.

- Another four-engine bomber plant has had a separate line for

N. American & Continental Economies Passed on to U.S.

NORTH American Aviation Inc. is making possible a saving of \$14,000,000 to the government and Continental Motors, Inc. has reduced price of contracts by approximately \$45,000,000, according to two separate announcements.

J. H. Kindelberger, president of North American, in announcing the return of the money, said: "The effect of our manufacturing efficiency has reduced the cost of a plane 33 1/3% over the cost of that same plane in the summer of 1940, when the cost of both labor and materials were lower."

"All North American plants are ahead of their contract schedule." The 33 1/3% figure, he said, applied to only one plant, but production costs "have been cut in all of them."

The Continental reduction was announced in an official War Dept.

release which said it had been made "after several months of negotiation with the . . . Price Adjustment Board."

Continental Motors officials also said that the reduction "was made possible through increased efficiency, plant economies, improvements in methods and wholehearted cooperation of its employees."

"In the effort to get rapid production at the beginning of the war effort contracts were undertaken on the basis of the best information at that time available," the War Department said. "The Price Adjustment Board of the War Department has been set up as a focal point for the reviewing of contracts entered into under such conditions with a view of readjusting them in the light of later developments."

production of another company's twin-engine bomber. The two-engine job was nearing completion and as the last ship on the line moved toward daylight, jigs to handle another four-engine assembly line were being built and moved right in behind the diminishing two-engine line.

The writer's log should be reassuring to the public. It covers an account of real industrial achievement, a story of the people, management and labor, pulling in harness to achieve a common objective—preservation of the free way of life.

There is a menacingly disturbing note to be found in it, however. A potentially disastrous wave of "oral sabotage" of the aircraft industry—partly unintentional, partly deliberate—exists today. The writer found it, without difficulty, in every aircraft community he visited. The deliberate phase is inspired by the Axis Powers, and is being carried out by their Fifth Columnists.

These agents are gleefully utilizing the irresponsible gabblings of the show-offs and the soreheads to further their end. Their end is inoculation of the American people, particularly the workmen, with a virus that will make them believe aircraft production is breaking down, that the workmen are brutally exploited, that management is venal and unpatriotic, that leaders of the war production effort are betraying them.

Success of this campaign could easily result in loss of the war, with subsequent subjugation and slavery for the people of the U. S.

The writer, on his inspection tour, collided with a striking instance of "oral sabotage" which demonstrated the regrettable and dangerous potentialities of this type of attack on the full-out effort of a great country in a righteous cause.

A committee of a state legislature had been formed to investigate the progress of aircraft production in that state. Without presenting his complaint or confiding his intentions

in any management official, a youthful worker in an aircraft plant in that state appeared before the investigating committee and testified that, when war production officials from Washington visited the plant, workmen were told to feign productive activity, that in reality production was poor.

The committee allowed extensive newspaper publicity of the charges to ensue, again without reference to the company.

The company was the one mentioned above where production had reached four digits.

The actual facts were well known to all responsible government officials—but the damage had been done.

Vitally necessary wartime censorship precluded a statistical refutation of the charges disclosing the truly sensational production record of the company. Naturally, such disclosure would have gratified the enemy. Even if the enemy was not directly responsible for the incident, once the young worker spoke out, the damage was done. If no refutation was made, public confidence in the aircraft industry was shaken. If the facts were revealed, valuable information accrued to the Axis.

Turning to the history books once more, the records prove that the American industrial system has worn well. A first-hand inspection of the one of America's industries—aircraft—during this country's latest and greatest trial mirrors nothing that would indicate a breakdown now, if a steadfast, countrywide stand is taken against the enemy, within as well as without.

The writer's uppermost desire—consummation precluded by necessary wartime restrictions—is that everyone could see what he has just seen.

New Luscombe Address

New mailing address of Luscombe Airplane Corp. and Luscombe School of Aeronautics, West Trenton, N. J., is box 1600, Trenton, N. J.

Tax Aid

(Continued from page 14)

cess-profits law spent large amounts in the development of new, vital defense items and had not shown profits previous to the law's enactment.

"These companies under present tax methods find it impossible to retrieve their losses, further expand their facilities, or accumulate enough funds to pay taxes, while commercial companies, under a priority 'freeze-out,' are now entering the defense industries with strong previous earning records and are allowed larger percentages of profits than are many of the companies who engineered the product."

"As a means of correcting this situation, someone in Washington has hit upon an idea to put a flat 6% profit limit on all defense contracts. In the light of the Treasury Department's ruling (TD5000) defining allowable costs, this would be ruinous to many subcontractors and would result in a further reduction of defense production."

"Should such a tax measure become law, the company mentioned would operate until mid-1946 in order to accumulate cash to pay current taxes, and assuming no further plant expansion. It, of course, in order to eliminate risk, would resort to liquidating inventories to pay past taxes and thus reestablish a sound position. As a matter of fact, the company has enough non-deductible costs to amount to almost 6% on its gross business anyway."

"After operating under the excess profits law since its enactment, it would appear that it serves chiefly as a means of correcting the errors of procurement agencies."

Another executive says:

"The only logical program is to have the government provide the finances and permit the repayment thereof on a lease basis. This plan has been made use of by a number of large corporations and while the provisions are probably available to smaller companies, the actual procedure necessary to procure financing on this basis is not known to most of us and the general impression is that there are so many conditions and so much red tape attached to the procurement of such a loan that there is no use trying to procure financing for expansion on this basis."

Any summarization of the opinions of defense subcontractors on their present problems tends to have an appearance of political implications, no matter how scrupulously any such intention is avoided. As one of them summed it up:

"As long as the idea that profits are a legitimate and essential ingredient in any production effort is questioned in high places, and raised as a political issue for pandering to ignorance, and penalized and preyed upon in mass propaganda, just that long will the producing taxpayer, upon whom the nation today depends for its very life, be kept in a false, weak, and misunderstood position."



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Fortnightly Review

(Continued from page 1)

conception of transportation by air from several hundred transports to thousands of transport and cargo airplanes of all kinds and descriptions. It is a venture into a new era of breathtaking possibilities, but it is also a step into a new era which could have been taken some years ago had the warnings of aviation been heeded.

The tragedy of the national neglect of air transportation has already been written in newspaper headlines, but it bears repeating over and over again until the war effort is directed into its true perspective of airpower. Hawaii, the Philippines, the Burma Road—these are stories we know well in this country—stories which would have been written differently had we developed airpower. For airpower is not only the power of fighting airplanes—it is also the power of transportation of men, supplies and fighting equipment by air. The fighting airplane soon becomes useless without its supply line of men and material. And only the cargo airplane can adequately and completely serve as the backbone of an air war fought on such wide and quickly-moving fronts as the one in which we are now engaged.

The rounding out of the full attainment of airpower, by building the supply lines on fleets of cargo planes, is simple in outline even if its achievement in getting the planes built and an organization perfected not so simple and easy. But in broad outline it is apparent that the first task is to demonstrate to those who have known so little of airpower that airplanes—hundreds of them—are capable of transporting enormous quantities of cargo, or men, long distances in little time. An air war cannot be fought successfully when its services and supplies are built around a ground transportation system.

Once the broad outline is accepted, however, there remains the job of achievement, and here the nation has ready to command the finest operating personnel in the world. No country or power on earth has the air transport brains and technicians with which the U. S. has been endowed. These brains and technicians

need free reign and scope to develop the air transport problem for this all-important all-out air war. These organizations must be kept intact to operate as units for greatest effectiveness. Air transportation is a highly specialized business—it is, in fact, a science. The Army does not pick lawyers to be Army physicians by the same token, it should utilize air transport specialists and technicians to execute its air transport tasks.

There are signs in the wind that this air transport asset is being recognized and will be fully and wisely utilized. If it is utilized in the right way, one phase of the air war is on the right airway. (See story on page 35.)

The Pullman Co. Started It

THE PULLMAN CO. and one or two railroads are starting a fight that will be hard for them to finish. The theme song of the recent series of Pullman Co. advertisements in national publications—"Two people sleep when One goes Pullman"—is a noxious type of advertising obviously designed to libel air transportation. For some years the airlines have refrained in gentlemanly fashion from capitalizing on the slowness of rail travel. They have sold their own goods aggressively and fairly without tearing down another form of transportation. The Pullman Co. advertisements are a breach of advertising ethics in extremely bad taste, and of benefit to no one. The snow piled deep, the cloudy skies, the sly inferences in the copy—are designed to defame air travel.

Air transportation has plenty of answers to combat the Pullman series, but this is hardly the time for uncouth scraps. The Pullman Co. is so anxious to have wives sleep with assurance that their husbands are "safe," why not send the husbands by air so they can sleep comfortably in hotel rooms instead of bumping and banging around all night in one of the most torturous modes of travel ever invented—the drafty, jerky, and slow-moving Pullman? By the way, has anyone tabulated recently (it will require an adding machine) the latest list of railroad accidents? (See pages 1 and 3.)

AWPC Is Launched

ORGANIZATION of the Aircraft War Production Council Inc. by eight major warplane builders of southern California is an interesting development with important ramifications and potentialities. It is encouraging in these times when joint action and pooling of facilities and ideas can be translated into better airplanes and faster production. The council's telegram to Donald Nelson, WPB chairman, cannot help but have a warm reception in Washington. Although the member companies are located in the Los Angeles and San Diego areas, the council is actually national in scope since most of the member companies have one or more plants located in inland cities. The far west has again demonstrated that it is productive of ideas and initiative. The new aircraft council's program and activities will be watched with much interest. (See story on page 13.)

Rude Intrusion on Reality

EVEN A SIGNED CONFESSION by the Civil Aeronautics Board itself that it was out of tune with the world at large could not have been more convincing in proving the point that the Board's ill-timed and grossly unfair decision cutting American Airlines' air mail compensation by \$2,000,000 annually. Even more inexcusable was the Board's retroactive recapture of "excess" payments which, of course, is nothing more nor less than expropriation.

Buried as the Board is among the pre-war mementoes of lost opportunities, perhaps it feels that it must squawk with thunder and terror to make itself heard in the hum and bustle of war activities. We are pleased to see that American Airlines is not taking the unjustified blow sitting down; the language it used in its petition for reconsideration is spirited, refreshing, and to the point.

The Board used to be merely asleep. Now it is becoming bumptious. (See story on page 30.)

Letters

Attention CAA!

Hollywood, Cal.

It is my earnest desire to have some one answer a few questions for me. Or, if you don't know the answers, may I cry on your shoulder for a bit?

I have been flying airplanes for a number of years—nearly 10 years with one of the world's largest airlines, for whom I flew in most of the South American republics. Previous to that, I was in the U. S. naval air service for several years, but since that time have had various connections with the aviation industry.

My wife and I have just recently returned from French Morocco where I was a technical adviser to the French Army Air Corps up to the armistice. We remained in Morocco nearly two years after the other Americans came home, and I filled in my spare time gathering information pertaining to airports, airplanes, roads, and any other data I thought might be useful to the U.S., with numerous photos as proof.

This business caused me to be elected to the unenviable position of target for a firing squad. Needless to say the unhappy event did not take place.

After spending two years of my time (and quite a sizeable pile of my own money), we came home. Please understand that I was not connected in any way with the U.S. government.

When we finally did arrive in the States, I started having trouble. First we went to Washington (at our own expense again) where I tried to place my information and maps in the place they could best be utilized. After nearly being driven nuts by a gang of angleworm-brained politicians we went to New York to arrange our personal affairs.

Then we came to Hollywood, where I mistakenly thought that a pilot could do a spot of work. Here is where I was confronted with problems that lead to the questions I mentioned.

Having held a transport pilot's license for a number of years, I very boldly told some jerk who thinks he is a CAA official—inspector, I believe is the title—that I wished to renew my license because it had expired while I was abroad. He smiled sweetly and remarked that it would be very simple. I was simple for believing him.

The inspector told me of the new regulation which requires an identification card before one can fly solo. He also told me of the necessary documents which I must have in order to obtain this card.

It was not difficult to obtain letters from two people in Pan American Airways who had known me for more than 10 years, but my pal neglected to say that these letters must be notarized. I simply considered this as an oversight on his

8-Year Error

On the Letters page of AMERICAN AVIATION for Mar. 15, due to a typographical error it was stated in a letter from R. Waugh, sales officer of British Overseas Airways Corp., that the writer in Oct. 1939 was appointed by Imperial Airways to manage an agency department. The date should have appeared as Oct. 1931.

part. So the letters went back to be duly notarized.

In the meantime I was worrying the Department of State about obtaining a photostatic copy of the affidavit, made by my mother, of the place and date of my birth. The above mentioned CAA person having told me that this was sufficient proof of my being an American citizen, again I believed him.

The passport division of the Department of State has issued me at least three passports with this affidavit, which would (to me) seem to indicate that they do believe me to be an American citizen.

But when I went, unsuspectingly, to Phoenix, Ariz., to do the necessary flying in order to renew my license, the head man informed me that he couldn't accept the photostat as evidence of my nationality. I tried to find out just what it is they require, and he didn't know any more about it than I do now—which is exactly nothing. All I know for sure is that I very rudely told him what was on my mind and left.

One of the questions is: What proof is acceptable by the CAA as evidence of nationality? Five different inspectors have given me four different answers.

Which leads up to the second question: Do these monkeys know what is required, and if so, is there any legal means of forcing them to divulge said information?

I was under the impression that we were in need of experienced pilots.

At one field where I sat on my posterior watching the airplanes, there were two Japanese pilots, and one naturalized American (Hungarian extraction) flying solo, or any way they wished. Can you tell me how come?

I thought we were fighting a war, but it seems that I was in the Sahara sun too long. Might be I am not a pilot, or an American either. Might it have been all a dream?

And that is my last question for now.

ROBERT E. DAVIS

New Plexiglas Outlet

LIBBEY - OWENS - FORD Glass Co., Toledo, O., announces it will fabricate Plexiglas transparent plastic parts for aircraft, under an agency agreement with Rohm & Haas Co., Philadelphia.



"Don't mind him if he asks how you're enjoying the trip—He spent seven years with TWA"

Frank J. Walsh

Frank J. Walsh, former treasurer and assistant secretary of the Aeronautical Chamber of Commerce, died in his Passaic, N. J., home, Mar. 19, at the age of 42. Walsh ended more than 11 years of service with the Aero Chamber to become assistant secretary of Vultee Aircraft Inc., at Vultee Field, Cal., on Jan. 15, 1941. He resigned from Vultee shortly thereafter because of failing health.

George W. Burrell

George W. Burrell, 39, operations manager of Republic Aviation Corp., Farmingdale, N. Y., was killed in an aircraft accident on Mar. 26 near Mitchel Field, New York, when a single-seat plane which he was testing went out of control and crashed. Burrell left the ship but had insufficient altitude to open his parachute. He had been with Republic Aviation since 1937, when he was made a test flyer.

Among his contributions to aircraft testing was the development of a motion picture recording device which included the use of a motion picture camera to record instrument readings during flight operations.

Fisher Output Zooms

Fisher Body Division of General Motors has expanded its bomber production facilities now available to take care of a maximum scheduled output forecast for this year, according to E. F. Fisher, general manager.

"Production of bomber sections is being stepped up sharply," Fisher said. "Shipment of parts and sections scheduled for March was completed the first week of the month while production in April will be several times greater than that for any previous month."

Obituary

ADAM C. DAVIS, 52, head of the department of experimental engineering at Cornell University who taught military aeronautics for the Army during the World War, died on Mar. 17 at Ithaca, N. Y. Professor Davis was interested in preliminary research in the development of radial aircraft engines.

HARRY A. TOULMIN Sr., 83, for many years patent attorney for Wilbur and Orville Wright, died on Mar. 25 at his home in Dayton, O. Toulmin conducted some 500 patent infringement suits for the Wright brothers.

Calendar

(Events listed below are subject to cancellation without notice)

APR. 24-25—Women's National Aeronautical Association, Annual Convention, Hotel Phillips, Kansas City, Mo.

APR. 27-29—Society of Aeronautical Weight Engineers Inc., 2d National Meeting, Palmer House, Chicago, Ill.

APR. 27-30—Chamber of Commerce of the U. S., Annual Meeting, Washington, D. C.

MAY 1-2—3d New England Aviation Conference, Providence, R. I.

MAY 19-20—National Metal Trade Association, Annual Convention, New York, N. Y.

MAY 31-JUNE 5—Society of Automotive Engineers, Semi-Annual Meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

JUNE 8-10—American Society of Mechanical Engineers, Semi-Annual Meeting, Cleveland, O.

JUNE 22-26—American Society for Testing Materials, 45th Annual Meeting, Chalfonte-Haddon Hall, Atlantic City, N. J.

Johnson Named CAP Head; Enlistments Exceed 37,000

EARLE L. JOHNSON, executive officer of the Civil Air Patrol for the past few months, has been appointed by OCD Director James Landis to succeed Maj. Gen. John F. Curry as national commander of the CAP. Gen. Curry was recalled to active Army duty last month as commanding general of the Fourth District, Air Forces Technical Command, headquartered at Denver, Colo.



Johnson

Johnson, as director of aeronautics for Ohio, prepared the pilots of that state for national mobilization prior to formation of the CAP last December. Later as Ohio's first CAP wing commander, he organized patrol units throughout the state, before being called to Washington to become CAP executive officer early this year.

Another early organizer of the CAP, Maj. Reed Landis, has left his post as aviation consultant to the Director of Civilian Defense to go on active duty with the Air Forces. A World War veteran and former vice-president of American Airlines, Maj. Landis joined Mayor La-

Guardia's staff last July serving as liaison officer between OCD and the group of airmen who as volunteers helped organize the CAP. On formal launching of the CAP program, he became director of CAP planning staff.

In announcing Johnson's promotion, OCD Director Landis reported that "more than 37,000 citizens, 80% of whom are civilian pilots, already have enlisted to fly their own or rented planes on a wide variety of assignments planned to relieve military planes and airmen for other duties."

While the majority of the CAP units are now engaged in an intensive training program which will require a minimum of 230 hours of classroom, drill, and field exercises, Landis stated that the more experienced pilots in many states already are flying on wartime missions, including courier service transporting Army personnel and equipment; cooperation with ground forces in maneuvers; and patrolling of strategic areas.

"CAP units," he said, "have been of great help to civilian defense by participating in such exercises as mock air raids, blackout tests, and aircraft spotter practice to simulate war conditions and put the volunteers on the alert. We are only beginning to see the full scope of use-

Moved Lately?

In order to prevent delay in the receipt of your copy of *AMERICAN AVIATION*, please notify us promptly of change of address. If possible, send notification 15 days in advance of effective date of change. Such notice should include the former as well as the new address.

ful services which the patrol is ready to perform."

An experimental 30-day test of courier service at the Middletown, Pa., Air Depot by the Pennsylvania Wing is described by CAP headquarters as having been "highly successful."

The Pennsylvania Wing is reported to have flown more than 1,000,000 pound-miles of Army cargo in the first 10 days of the mission, despite bad weather. During the test period, five CAP planes were based at the Harrisburg airport, six miles distant from Middletown, with pilots on the alert from 7:00 A.M. and ready to report for duty at the Army depot within 15 minutes after notification.

Trips were made to points as far distant as Georgia and South Carolina, and according to Pennsylvania Wing Commander William L. Anderson, "The response at all Army fields has been enthusiastic and officers promised to make additional use of the CAP as they become more familiar with its functions."

Identification Card Requirement Extended

CIVIL AIR Regulations have been amended by CAB to require carrying of CAA approved identification cards by all civilian mechanics, air traffic control operators, aircraft dispatchers, and ground instructors, after May 15.

The identification card, like now carried by civilian pilots, contains the bearer's fingerprints, picture and signature.


Thompson Joins AIAA

Aero Insurance Underwriters Association that Raymond C. Thompson has joined the organization's engineering department at the New York City office in New York City.


Thompson, 38, a pilot and aircraft engineer, has served as chairman of the aviation committee of the general assembly of Vermont. In 1937 he was appointed Director of Aeronautics for Vermont and since then he has been active in directing all aviation activities in the state.

Stanton Wins Award

Charles I. Stanton, Acting Administrator of Civil Aeronautics, was given the annual award of the Washington (D. C.) Air Derby Association, Mar. 24, for having done the most for private flying in the Washington area during the past year.



BREWSTER
Buffalo
Equipped with
SOLAR
Exhaust
System

 ESTABLISHED 1927
Solar Aircraft Company
SAN DIEGO, CALIFORNIA

Famous Airplanes Solar Equipped — Ninth Advertisement of Series



THE sample poster above is an employee contribution to Beechcraft's "MacArthur Week" which was voluntarily arranged by Beechcraft shop employees to set a "par" or standard for the results of *all out production*.

Production reached a new high for a weekly period. All employees enthusiastically participated. . . We offer the idea freely to those other loyal Americans who are on the production front.

BEECH
AIRCRAFT
CORPORATION

Beechcraft

BEECH AIRPORT
WICHITA, KANSAS
U. S. A.



Uncle Sam travels by Air



Agreement: Two transportation agencies agree on one thing in their advertising—It's wise to emphasize the movement of men important to the war effort, sleep or no sleep. The American Airlines ad appeared in *AMERICAN AVIATION* for Sept. 15, 1941. The Greyhound space ran in *'Life'* for Mar. 30, 1942.

UAL Fined

United Air Lines has paid a fine of \$500 to the Civil Aeronautics Administration for operating an aircraft "on and across various civil airways between Cleveland, O., and Washington, D. C., without being possessed of an air carrier operating certificate authorizing such operation between said points . . ." The violation occurred July 13, 1941.

Mail Rate Set

CAB has set mail pay of 19.5c per mile for United Air Lines' AM57, Seattle-Vancouver, effective Apr. 2. Based on president operations, UAL's mail revenue on the route will amount to \$50,000 per year. The company will also receive about \$45,000 for transportation of mail on the route since May 12, 1941, when mail schedules were first designated.

AA Demands Rehearing of Rate Case Sees Government Ownership Threat

Industry's Future In the Balance, Westwood Says

Bulletin

CAB has granted American's petition for reconsideration and reargument, but took under advisement the demand for a rehearing, indicating that it would decide this question after reargument. A request for a stay of the effective date of the rate order was denied. Re-argument was to be held as this issue went to press.

IMEDIATE rehearing, reargument and reconsideration of its air mail rate case was requested by American Airlines on Apr. 1 in one of the most strongly-worded petitions ever received by the Civil Aeronautics Board.

If the Board's rate-making philosophy stands, "then government capital, with consequent government proprietorship, is the only hope of financing the great expansion which the Board envisages," the company warned.

Rates set by CAB were 12c per mile on and after Apr. 1, 1942, on all routes, when daily designated mileage for any month does not exceed 35,000 miles; 16.5c per mile for the period from Dec. 1, 1939 to Mar. 31, 1942.

The rates cut \$2,000,000 yearly off the company's future air mail pay and slashed almost \$4,500,000 off compensation for the past 28 months.

Reactions to the decision were noted immediately in various quarters. Among the investment services, Standard & Poor's advised investors to sell their airline stocks, and Hare's Research & Management pointed out that the growth possibilities of commercial aviation "can be stifled through unwise, overzealous and restrictive bureaucratic control" (see page 38).

In oral argument on the Eastern Air Lines rate case, in which both retroactive and future cuts have also been recommended, the American decision was roundly criticized by counsel for EAL and the other airlines.

Most Important Case

Howard C. Westwood, attorney for the Air Transport Association, appearing in the American case as counsel for the other domestic airlines, stated that "the industry's future is in the balance."

Urging that the case be reconsidered, Westwood said: "The Board

has announced its most important decision. It is doubtful whether any case which the Board will ever decide will have the close attention which this one has received both within the industry and among the general public. Nor has this attention reflected merely the sporting interest excited by legal combat—rather it has reflected a consciousness that the industry's future is in the balance.

"Rightfully this case has been regarded as a test of the extent to which the industry's future development would be actively encouraged, and of the extent to which private management would be free to exercise initiative. Unfortunately the opinion of the Board, if it means what it is understood to say, cripples section 406(b) of the Act as a means of development and surrounds management with such restraints as to reduce to the very minimum the opportunity of initiative.

"And on top of all else, it leaves a carrier . . . facing a legal tangle, the unravelling of which would delight a Dickens—but which scarcely comports with the letter or spirit of the Act which was so warmly commended by leaders of both parties in Congress as virtually a model of legislative drafting."

In its petition, American pointed out that unless reconsideration is granted, it will "have no other alternative than to immediately seek at the earliest opportunity a re-determination by the Board of its rates in a new proceeding, pending judicial review of the present order."

The decision, American said, is "so unrealistic, so fundamentally

unfair to petitioner, and establishing such vicious regulatory principles, among others that of recapture, that it is utterly impossible for petitioner to reconcile the Board's conclusions with any of the purposes or policies of the Act . . .

"It is inconceivable to petitioner that the Board . . . could sentence an air carrier on the threshold of an international economic disturbance of unprecedented proportions precipitated by the war effort, to a period of harassing litigation over whether the Board's rates or (Interstate Commerce) Commission rates were the appropriate ones for the petitioner to receive since Dec. 1, 1939. The enormity of this position in the light of the demands upon each member of the . . . industry today . . . cannot escape the attention and condemnation of even the least informed."

CAB's contention that American was "on notice" that its rates might be reduced was called "viciously unfair" in the petition.

No Return?

As of Dec. 31, 1941, American's total earnings since 1934 were \$4,013,800, the petition said, adding that if CAB's rates stand, the company will be forced to refund \$4,009,295, leaving net earnings of \$4,505. The facts "undeniably show that if the Board's order becomes effective, the petitioner will have earned no return whatsoever on its investment."

In not considering the early unprofitable years, but only the later profitable ones, "CAB acted 'arbitrarily and capriciously,' American contended.

The recapture principle, plus a limited rate of return, constitute an "unbeatable combination" in the discouragement of private capital investment in air transport, the company charged.

"The Board's willingness to create a claim in favor of another department of the government for the expropriation of petitioner's entire earnings since its incorporation combined with its attempted amelioration thereof by suggesting a possibly untenable legal position regarding a federal income tax refund constitutes in itself, petitioner submits, a clear demonstration of an arbitrary and capricious attitude on the part of the Board elsewhere implicit in the Board's action in the proceeding," it added.

American further accused the Board of making no "findings of fact concerning the present war-time requirements of commerce, the postal service and, particularly, the national defense."

CAB "grossly discriminates" in failing to allow any base compensation for miles flown with mail in excess of 35,000 daily, even though American's average daily designated mileage with mail on Apr. 1 was about 100,000, the petition asserted.

K. N. I. L. M.
Royal Netherlands Indian Airways, Ltd. (Incorporated in the Netherlands Indies)

Regular weekly air service from Sydney to Batavia, and from Batavia to Lydd, Palestine, in association with K.N.I.M. (Royal Dutch Air Lines). Stops at Darwin, Singapore, Medan, Borneo, India, Iraq, etc. Connections at Lydd with flying boat service to Africa. Inter-continental services to Europe, Australia, New Guinea.

HEAD OFFICE FOR AUSTRALIA AND NEW ZEALAND AT
NO. 9 MARTIN PLACE, SYDNEY
TELEGRAMS: "K. N. I. L. M."
(CABLES AND FREIGHT RATES ON APPLICATION)

Historic: End of an era in world air transport history was marked recently with this last house ad in a KNILM publication, just received in the U. S., announcing service to Batavia, Darwin, Bali, Singapore, Burma, Macassar, etc.



VALUE OF AN HOUR

Today's hour is different from that of a few short years ago.

Before the airplane, it represented forty miles of transportation. Now . . . nearly two hundred!

The airlines of the United States have shrunk the nation to the size of Pennsylvania.

And in doing so, they have multiplied the value of every man's hour—of the men in factories and mills making arms for war . . . of the men whose

letters go "Air Mail" and whose shipments speed "Air Express" . . . of the men guiding our nation's course.

As the value of all Time increases, the time-savings of air transportation become ever more important and Time has never been so vital as today.

UNITED AIR LINES





Wildcats in Action

"... In a recent engagement between Japanese land-based aircraft and Grumman Wildcat carrier-based fighters, a total of ten Japanese fighters and three bombers were destroyed without a single loss of our own planes."— Secretary Knox. These Wildcats, like all other Grumman F4F's in Navy service, are powered by Pratt & Whitney Twin Wasps.

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EAST HARTFORD, CONNECTICUT
ONE OF THE THREE DIVISIONS OF UNITED AIRCRAFT CORPORATION



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Four Airlines Battle for West Coast Pick-Up Routes

IN A strange and controversial hearing, four companies were battling it out as this issue went to press to see who (if anyone) will operate a system of air mail pick-up routes on the Pacific coast.

The four companies, seeking lines covering the coast from Canada to Mexico, are West Coast Airlines, Southwest Airways Co., United Air Lines and Western Air Lines.

Although the case is supposed to have national defense aspects (CAB last Dec. 12 said it would hold no new route hearings unless required by national defense) no representative of the Army or the Navy was present during the first week.

In addition, the Board was allowing no national defense testimony, the issues being limited to (1) fitness, willingness and ability to perform the service on a temporary basis, (2) availability of equipment and personnel, (3) cost of rendering the service, and (4) effect of the proposals on existing operations.

Nick Bez, president of West Coast Airlines, told Examiner J. Francis Reilly that if a certificate is awarded for a sufficient length of time, with adequate mail pay, to enable amortization of the investment, he and his associates are prepared to put up all necessary funds. He mentioned five years as a sufficient length of time, and stated that if the certificate were for a shorter period of time he would seek to have a government agency advance funds.

Bez expressed the hope that any temporary certificate awarded eventually would become a permanent one.

Non-Profit Proposal

By far the most striking testimony during the first week was given by UAL President W. A. Patterson,

who asserted that if there is a military need for the pick-up service, UAL is willing to perform that service on a non-profit contract basis.

Patterson also went on record as believing that feeder pick-up operations would benefit rather than injure existing trunk line carriers. However, the big question in his mind, he said, is "How long would it be before a feeder company becomes a trunk line?"

The UAL president disclosed that his company already has more than \$1,000,000 of its capital invested in the performance of transport service for the military on a contract non-profit basis, and is ready to undertake pick-up operations on similar terms if the routes are desired for military purposes.

He expressed the opinion that any certificate issued should be on a temporary basis, leaving the door open for reconsideration when conditions change and the military need for the service no longer exists.

While agreeing with the principle that feeder service would be deserving of trial during normal times, Patterson added: "I don't think this is the time to conduct any experimental service. If the military wants the service, United is willing to conduct it. This is no time for experiments. We've got to win a war we are now losing."

Subsidy Needed

Patterson estimated that between 50c and 60c a mile mail pay would be required to make a pick-up feeder self-supporting, suggesting that "I think we'd have to call that subsidy . . . I have no doubt that feeder service will have to have subsidy to survive." Since a subsidy would be necessary, feeder lines should be looked upon as a type of RFD air mail service, subsidized by the federal government, he said.

UAL, he added, could render the Pacific coast service cheaper than a new company, since it could spread overhead, direct charges, etc.

The hearing also brought the revelation that John E. Parker, of Auchincloss, Parker & Redpath, Washington investment house, had proposed to two domestic airlines that they and any other companies wishing to participate, buy out West Coast Airlines.

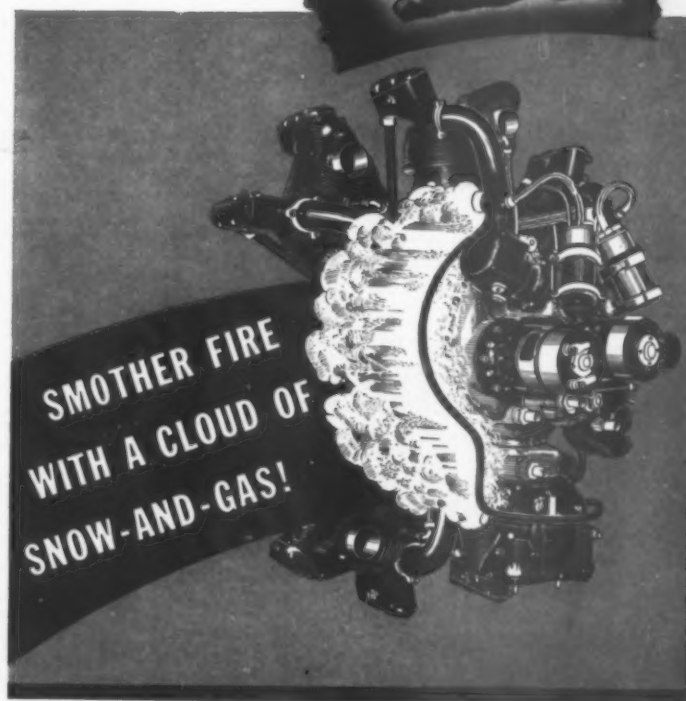
Parker said he did not agree with the attitude of the domestic airlines opposing pick-up, and believed they should have entered into some kind of a "participating effort" to buy Nick Bez's interest in WCA. These routes, he said, are needed for national defense, and added that his motives were "purely patriotic" in sounding out two airlines, which he identified as United and TWA. Bez, he added, did not know of the proposal.

As a director of Northwest Airlines, Parker said he believed WCA's routes would benefit NWA's service.

The witness explained that he will assist Bez in securing capital, if needed, but has no agreement to underwrite WCA securities.

IF YOUR ENGINE SHOWS THIS ...

JUST PULL A HANDLE ...



SMOTHER FIRE
WITH A CLOUD OF
SNOW-AND-GAS!

YOU see that your engine's on fire. You reach for a handle. Give it a pull. A rush of LUX carbon dioxide snow-and-gas smothers the flames. Nothing could be simpler!

It's quick too! No extinguishing agent in aviation kills fire faster than LUX carbon dioxide. LUX chokes out fire in 3 to 4 seconds!

And It's Clean-cut! No fire-killer is so completely harmless to engines, accessories. Cold, clean and dry, LUX gas disappears into thin air when its extinguishing job is done.

There are Built-in LUX Systems for both multi-motor and single-motor planes . . . for "in-line" as well as radial engines. LUX flame detectors, teamed with Built-in LUX Systems, may be used as the actuating element of a completely automatic fire-fighting unit.

Why chance fire in the air, or on the ground, when protection against it is so easy, sure?

Write for the booklet "White Magic." It tells the whole story of LUX Built-in Systems. It's Free!

Walter Kidde & Company, Inc.
439 West Street • Bloomfield, N. J.



New Medium: Not hot dogs, clothes, shoe shines or fresh fish, but air transportation is now advertised on the "sandwich board." The above picture shows Eastern Air Lines' novel way of acquainting Burlington, Vt., with its Florida service. William S. Appleyard, EAL's Vermont agent, is responsible for the idea.

CAB Extends Deadline

CAB has postponed to July 1 the date by which scheduled carriers must equip planes with altitude recording devices.

STANDARD Products—
Standard for the Industry

STANDARD AIR

PARTS

Suppliers to the U. S. Army Air Corps—to the Royal Canadian Air Force—to the British Royal Air Force—and to leading American aircraft manufacturers.

Thermostats and Pressure Relief Valves and Tanks for Liquid Cooled Engines

Sheet Metal Stampings and Welded Assemblies

Aircraft Lighting Equipment

STANDARD AIRCRAFT
PRODUCTS, INC.
DAYTON, OHIO

Pan Atlantic Steamship Corp. Asks First Exclusive Air Freight Route

New Orleans-N.Y. Link Would Carry 2,817 Tons Yearly

A 1,226-mile route from New Orleans to New York via Atlanta, for carriage of air freight only, was sought Mar. 26 by Pan Atlantic Steamship Corp., in an application filed with the Civil Aeronautics Board.

It marked the first time that a company has requested an exclusive freight operation, as distinguished from air express.

PASC, a subsidiary of Waterman Steamship Corp., emphasized that it is not requesting authorization to carry mail and is not seeking "a subsidy of any description from the U. S. Government."

During the first year, the company claimed that it will carry 5,634,000 lbs. of cargo, receiving revenues of \$507,060 (9c per lb.). Expenses are estimated at \$432,626, leaving a profit of \$74,434 before taxes and interest.

The application emphasized that the route would not affect the revenues of other airlines, because tariffs would not be "competitive up to the maximum poundage as constituting air express. Tariffs on cargos in excess of air express poundage would be classified as to weight and cubic dimensions and would generally be of such weight and dimensions that passenger-

carrying aircraft would be incapable of handling."

Use Cargo Plane

PASC proposes to use equipment of a type "not vital or required by national defense" until such time as Waterman can complete designs and construction of a more suitable type cargo aircraft constructed of non-vital material, according to a letter accompanying the application.

The application itself stated that "strictly freight carrying" two and four-engined landplanes will be used, either (1) procured from existing aircraft manufacturers, or (2) designed and manufactured through Waterman's facilities. Cost of the twin-engined plane was given as \$150,000 fully equipped.

One round trip daily would be operated, leaving New Orleans at 6 P.M., arriving in New York at 4:45 A.M.; leaving New York at 6 P.M., arriving New Orleans at 2:43 A.M.

The application is in the interests of national defense, the company insisted, pointing out that there are many Army bases and shipyards along the route which could be adequately served as needed by arrangement between the War Dept. and CAB, as to points other than specified in the certificate.

The company, with assets of \$2,730,181, stated that it has successfully operated steamship service between New Orleans and New York, as well as other Gulf and Atlantic coast ports, from 1933 to Feb. 1942, at which time the War Shipping Administration took over 10 of its 11 vessels for national defense operations to other parts of the world.

Rails Taxed

Removal of vessels from coast-wise trade, together with submarine activities, have taxed the railroads beyond their capacity, it added. A company survey showed that "sufficient cargo of a type readily adaptable to air carriage is available in such quantities from its present shippers that it may be transported at an extremely low rate per pound and still realize a return on its investment over all operations costs without government aid."

The applicant has its staff, "long experienced in the transportation field, which it desires to hold intact until the post war day" or until WSA returns its vessels, or furnishes replacements, the company said.

Officers are listed as E. A. Roberts, president, and Roy Keeley, vice president (formerly with the Civil Aeronautics Administration).

E. S. Ridley Named Vice Pres.- Director of Canadian Colonial

EDWARD S. RIDLEY has resigned his position as assistant director of the Civil Aeronautics Board's economic bureau to become executive vice president and director of Canadian Colonial Airways Inc.



Ridley

Before joining the Civil Aeronautics Authority in 1938, Ridley was connected with the Delco Remmy division of General Motors Corp. as assistant to the comptroller. He had also been cashier and later vice president and director of the Anderson Baking Co.

All American Elects Stringer, Bazley

ALL AMERICAN Aviation, operator of the air mail pick-up system, has elected Harry R. Stringer as vice president in charge of traffic.



Stringer



Bazley

advertising and public relations, and Maj. H. R. Bazley as vice president-operations.

Stringer, a former Washington newspaperman, joined AAA in Mar. 1939, as director of public relations. Maj. Bazley became operations manager of the company in 1939. He was formerly assistant director of aeronautics of Pennsylvania, and prior to that was director of aviation for Allegheny County. He is a major in the Air Corps Reserve.

RECOGNIZED LEADERSHIP

Meticulous craftsmanship best characterizes production at the Pioneer Parachute Company. Unhurried and painstaking, experienced men and women work with scientifically pre-tested materials. Pioneer standards of absolute safety set the careful tempo. Flyers in every branch of aviation rely on this insurance of Pioneer perfection.



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MANCHESTER, CONNECTICUT, U. S. A.

PROMPT ON-SCHEDULE
DELIVERIES...WRITE
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OF OUR FACILITIES

EXHAUST COLLECTORS

AND OTHER STAINLESS STEEL AIRCRAFT COMPONENTS

SHEET ALUMINUM FABRICATION • TANKS • COWLING • ETC.

AIRCRAFT COMPONENTS, INC.

8000 WOODLEY AVENUE • VAN NUYS • CALIFORNIA

A THOROUGHLY COMPE-
TENT ORGANIZATION...
SPECIALIZING IN SERVING
THE PRIME CONTRACTOR

Year
1935
1936
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UAL Cancellation Suits Go to Court for Final Ruling

AFTER EIGHT years of litigation and four years of intermittent hearings and legal moves, the United Air Lines suits resulting from the 1934 air mail contract cancellations are being studied by the Court of Claims for final decision.

Both UAL and the government appeared before the Court on Apr. 8-9 in oral argument on the suits, in which UAL is claiming \$2,406,780. In a report issued several months ago, Court of Claims Commissioner Akers found that there was no fraud or collusion on the part of the companies. He left the amount of damages to the Court.

Arguing for the UAL companies, Paul Godehn told the Court that there was no collusion in the meeting of the airlines with Postmaster General Walter Brown in May 1930. The government has claimed that the airlines at that time entered into a combination to defeat competitive bidding, and that they "divided up" the air mail map between them.

Godehn contended that it was "simply bewildering" that anyone could contend that UAL would assist Brown in establishing what are now the transcontinental routes of American and TWA. Testimony given at the lengthy hearings by Col. Paul Henderson of UAL was "shot through with animosity" to-

ward Brown and the meeting, he said.

UAL did not agree not to bid for the other transcontinentals, but rather could not bid for them because (1) it lacked equipment and personnel, and (2) it would have been competing with itself, Godehn pointed out.

He emphasized that the route certificates of that time were enforceable contracts.

UAL claims damages of \$2,406,780, whereas between Jan. 1, 1934, and Apr. 5, 1936, the company's actual losses were \$2,475,427, Godehn said, explaining that if damages are granted the company will still have lost \$68,646.

Assistant Attorney General Francis M. Shea, representing the government, claimed that Postmaster General Farley has a "clear duty to annul these route certificates." The Postmaster General made a full and fair investigation of the facts. If the PMG made a full investigation and decided it was his duty to cancel the contracts, the government cannot have a liability imposed upon it for the exercise of that duty, Shea said.

Although UAL may not have liked the 1930 meeting, they nevertheless participated and "made their trades," he asserted.

portation. Size alone is no true indicator of ability.

"Every airline to begin with was small and by means of relatively simple consolidation, several of the small ones could easily become one unit considerably larger than the largest in terms of what we think of today. Then the company headed by the aforementioned airline president could conceivably be one of the smaller operations and fall within the category he mentions."

Gain on Pullman

(Continued from page 3)

000, equal to only 3.9% of the 7,146,269,000 revenue passenger miles operated by Pullman.

Every year since, the airlines have gained consistently until in 1941 the ratio of airline to Pullman revenue passenger miles had climbed to 13.7%.

The 1,384,739,000 revenue passenger miles flown by domestic air carriers last year represented a 39% increase over 1935, while the Pullman figure of 10,070,406,000 in 1941 was 40% larger than its comparable 1935 total.

Airlines Make Preparations For Bigger Wartime Role

AIRLINE officials flocked to Washington last fortnight and speculation was rife in both military and industry quarters that big things were about to happen—that the airlines are to assume war duties overshadowing anything that has happened so far.

Although nothing can yet be written concerning the nature of these duties, all indications were that the airlines are preparing for bigger things.

Braniff Airways asked permission—and received it within 24 hours—to suspend service indefinitely between Amarillo and Oklahoma City.

"The applicant has undertaken to perform certain services for the U. S. Army directly related to national defense," Braniff said.

"Due to the present shortage of equipment, this service cannot be rendered unless the applicant curtails certain of the services presently being rendered by it."

In addition, Braniff has dropped the following air mail schedules (one round-trip in each case): Houston-Corpus Christi, Houston-San Antonio, Amarillo-Dallas,

Houston-Galveston and Dallas-Houston.

"Now we have the job we wanted," said Braniff's latest house organ. "We're in this war up to our necks. We've enlisted! Although no public announcement will be made by the company, the job we have to do is gigantic. The part each and every one of us will play is just as important to the successful prosecution of the war effort as the man who installs the highly secretive bomb sights at the teeming aircraft factories."

Pennsylvania-Central Airlines was granted permission by the Civil Aeronautics Board to suspend service indefinitely between Flint and Traverse City. Application for suspension was made to enable PCA "to perform military service which has been requested of it without seriously impairing operations on AM41 and other routes," the company said.

Northeast Airlines also dropped an air mail trip between Boston and Montreal.

Formation of the United Air Lines Victory Corp., to handle war tasks, was also seen as a preliminary move (AMERICAN AVIATION, Apr. 1).

Baker Defends Small Airlines

G. T. BAKER, president of National Airlines, has taken issue with W. A. Patterson, president of United Air Lines, regarding the part to be played by small airlines in the post-war period.

"Recently a most amazing statement was brought to my attention, made by the president of one of the large airlines, which said that small lines would have difficulty keeping pace with technical and other developments in air transportation after the war," Baker said.

"This is a very broad statement, extremely indefinite and one that could not be other than misleading. I am, of course, not taking into consideration the trend of thinking, which it may have been the intention to direct into channels which could react to the disadvantage of the smaller airlines.

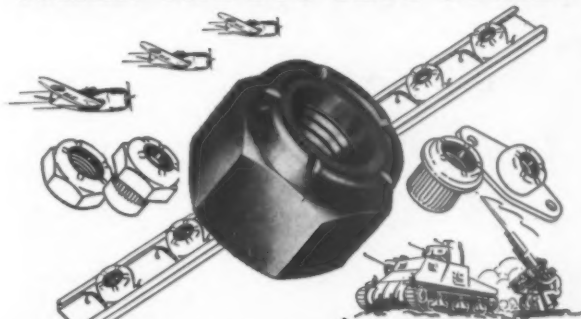
"The technical advancement of the industry has been tremendous and was brought about largely through the close cooperation and collaboration of various governmental agencies and manufacturers. No one company has a corner on technical or other developments in air trans-

Air and Pullman Revenue Passenger Miles

Table 2

Year	Domestic Air	Pullman	Ratio of Air to Pullman
1935	279,375,000	7,146,269,000	3.9%
1936	338,242,000	8,354,840,000	4.0%
1937	407,295,000	9,170,428,000	4.4%
1938	476,402,000	8,269,882,000	5.7%
1939	677,672,000	8,485,399,000	8.0%
1940	1,045,100,000	8,213,878,000	12.7%
1941	1,384,739,000	10,070,406,000	13.7%

WHEN THE BIG TEST COMES



These nuts hold tight

Bolted connections on military airplanes call for lock nuts that hold with a grip which is positive and yet resilient... a grip that withstands the complex vibrations, the stresses, and the shocks, of high-speed maneuvering... a grip that protects the ships and the men who fly in them.

Evidence that Elastic Stop Nuts meet these all-important requirements is found in the fact that they are used for vital structural and equipment fastenings on every military airplane built in the Western Hemisphere. • Write for folder explaining the Elastic Stop principle.

There are more Elastic Stop Nuts on American airplanes, tanks, and other war equipment, than all other lock nuts combined.

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ELASTIC STOP NUT CORPORATION • 2354 VAUXHALL ROAD • UNION, N. J.

Elastic Stop SELF-LOCKING
NUTS
AND AIRCRAFT FITTINGS



Travaleer
Gives You—

Dust, moth or moisture - proof protection for our suits, shirts, socks, shoes, etc. Hang anywhere—use as a suitcase.

ONLY \$13.95

Net Prepaid
(Tax Paid)

A real bag for the Air—light in weight, yet holds a load—check this bigger, roomier bag for size—35½" long, 24" wide, 5½" thick.

See Yours Today

Thousands in use—money back guarantee, 40 years in business. Choice of Army Tan or Olive Drab rubberized duck.

Order direct—Save the difference

Canvas Products Corp.
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Send your A-1 Travaleer Suit bag on 5 days trial. If after five days I do not find it okay, I can return it and you'll refund my \$13.95.

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C.O.D. _____ Enclosed _____

Name _____

Color _____

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City _____ State _____



SYMBOL OF SPEED

Schedule your trips to make every hour count. From Tulsa to Denver—from Denver to El Paso—Continental can help you save hours, even days of vital war time.

America's Fastest
CONTINENTAL AIR LINES

McCarran Questions CAB Attitude on New Airlines

IN AN amendment to the George resolution offered by Sen. Pat McCarran (D., Nev.), the Civil Aeronautics Board has been instructed to furnish information on what steps it "contemplates taking with respect to the issuance . . . of certificates to air carriers who were not engaged in air transportation" when the Civil Aeronautics Act was passed.

As amended, the George resolution, which requires a report from the CAB on its activities, passed the Senate.

Sen. McCarran asserted that complaints have been received that CAB has "frozen" airlines and has not permitted any new companies to enter the field. He pointed out that "the policy (of the Civil Aeronautics Act) was not to freeze the lines as they then existed but to

give consideration to proper economic expansion."

It is apparent, he added, that "no new lines have been established since the set up of the Civil Aeronautics Authority. Some applications for new lines have been filed but if they have been granted my attention has not been called to it . . . The country from various points is complaining that the . . . Board for some reason or other has frozen lines as they were, and this amendment is to go into that entire phase."

How CAB will explain steps it "contemplates taking" is not known in view of the fact that on Dec. 12, 1941, the Board announced that no new routes would be granted for the duration, except those which might have some national defense value.



Applications

Pan Atlantic Steamship Corp. has asked for a freight route from New Orleans to New York via Atlanta. Complete story on page 34.

National Airlines has filed application for consolidation of its routes AM31, Jacksonville-Miami, and AM39, Jacksonville-New Orleans. "The purpose of this petition is to consolidate the two routes for accounting purposes only . . ." NAL said.

Automatic Air Mail Inc. is seeking more air mail pick-up routes, one from Moline, Ill., to Omaha, Neb., via 29 intermediate points, and another from Omaha to Moline via 24 points.

CAB Decisions

UAL Rate: CAB has awarded United Air Lines mail pay of 19.5¢ per mile on AM57, Seattle-Vancouver. Complete story on page 30.

Braniff Suspends: Braniff Airways has been granted permission to suspend Amarillo-Oklahoma City service in order to use planes for military purposes on page 35.

PCA Drops Schedule: Pennsylvania-Central Airlines has received permission to drop schedule between Flint and Traverse City on AM41.

CAL Rate: CAB has set mail rates for Continental Air Lines' AM20 and AM43.

Examiners Report

PCA Rate: CAB Examiner Herbert K. Bryan has submitted recommendations on air mail rates for Pennsylvania-Central Airlines.

Hearings

Pick-Up Hearing: Hearing was in progress as this issue went to press on applications of West Coast Airlines, Southwest Airways Co., United and Western for air mail pick-up routes on the Pacific coast. Complete story on page 33.

Miscellaneous

AA Petition: American Airlines has asked reargument, rehearing and reconsideration of its controversial air mail rate case. Complete story on page 30.

Calendar of Hearings

Apr. 16—Universal Air Freight, investigation to determine whether company is an air carrier.



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Airline Personnel

Sales and Traffic

George Cower Wright, formerly traffic and agency representative for American in NY, has been appointed city traffic manager at SR, succeeding T. P. Gould, who has been transferred to BW.

Claron E. Bartholomew, formerly TWA reservations supervisor at KC, has been named acting system reservations superintendent at KC.

George D. Keyser Jr., regional traffic manager of Western for Montana and Canada, has enlisted in the U. S. Army, following eight years of service with the company. Thomas D. Tobin, BT dtm, has taken over Keyser's duties, and Counselaire Constance Peterson has been placed in charge of the GT office.

New Braniff reservations clerks include Ann Agee at WF, Barbara Berry at HU and Roy Daniel at DL.

A. F. Hinshaw has been named dtm for Mid-Continent at MP, succeeding V. C. Wason, who is now a lieutenant in the Navy.

New Western reservations employees at LA are Carolyn Martin, Norman Geiger, Jack Neel and William Parker.

Glen Archey, Braniff transportation agent, has been transferred from GS to HU. W. O. Dewees, also a transportation agent, has been shifted from WF to FV.

George Coffey, employee of United's agency and foreign department in NY for the past five years, has been named assistant manager of the department.

Robert Ramey, formerly an operations official with TWA, has been named personnel manager for the airline in CG.

New United senior counter agents include William A. Looney and Wilber W. White in NY; Henry P. Hyde and Thomas N. Winkler in CG; Maurice L. Perry in LA and Eugene H. George in SF.

V. H. Fulcher is now assistant to the general traffic manager of Trans-Canada and has headquarters in WG.

W. R. Campbell, former traffic representative for Trans-Canada at YZ, has been named ctm at OW; J. J. Robinson, former UL traffic representative, succeeds Campbell at YZ, and G. E. Gray, former representative at YZ, succeeds Robinson at UL.



Gould

Keyser

Smith

Wright

Operations

Bob Deverell has been transferred from PD to SQ operations by United. W. W. Fowler is Trans-Canada's new operations superintendent, with jurisdiction over the company's operations east of UL, including Newfoundland. E. W. Stoll has been named operations manager of the company's western division, with headquarters at QL. He replaces H. Hollick-Kenyon, resigned.

Trow Sebree, former chief pilot for Pennsylvania-Central, who went to Puerto Rico early last year as vice president-operations for Aerovias Nacionales Puerto Rico, is back with PCA as a captain, flying out of NW.

Carl J. Brock, formerly assistant maintenance superintendent for Delta, has been named superintendent of maintenance, succeeding William C. Miles. Harold L. Millican, formerly crew chief, has been promoted to chief inspector, and Manley B. Wagner succeeds Millican.

W. G. Golien has been appointed chief pilot for TWA. George Rice succeeds him as western region chief pilot, with headquarters at LA.

Donald Walker and Thomas C. Cornwall are now working in Pan American's SA maintenance department.

P. A. Fankhauser, W. P. Rowe, Jr. and E. E. Deason have been named



Millican

Brock

Rice

Golien

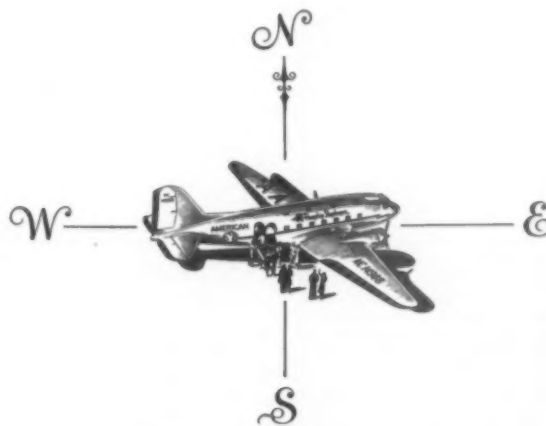
airport clerks at JI by Pan American, and J. M. Fiek and George F. Layton occupy similar positions at Treasure Island.

Miscellaneous

Robert J. Smith, formerly vice president-operations of Braniff, has been named to the newly created post of executive vice president.

Ernest H. Brown has been promoted from assistant secretary of Western to personnel manager.

Richard D. Warfel, formerly dtm for Penn-Central in northern Michigan, has been named assistant to Personnel Director James H. Baldrige.



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CAB Rate Mood Crimps Transport Stocks; Poor's Advises Switching to Other Shares

By FRANKLIN H. STEVENSON

CIVIL Aeronautics Board's decision drastically cutting American Airlines mail pay continued to produce repercussions in the past fortnight.

The most immediate reaction was, of course, a sharp drop in American Airlines shares, which as this is being written were hovering around their 1942 low of 28¾ (set after the decision was rendered), which is about eight points under the prices which prevailed immediately before the decision was announced. Incidentally, the high for 1942 was 48¾; the top for 1941 was 58½, and low was 40.

Perhaps even more significant from a long-term point of view is the pessimism with which the news was received by certain investment advisory services. (It is still too early for comment from these sources on the CAB Braniff decision, which set a tentative mail rate for that line which is designed to bring the company an increase of about \$450,000 a year in total mail revenue—Ed. Note).

Briefly reviewing the American decision, a rate of 12c per plane mile up to 35,000 miles daily was set with a steeply descending scale on mileage above that total, effective April 1.

This, it is predicted, will cut mail pay about 50% and if it had been in effect last year would have reduced this item considerably, perhaps by as much as \$2,000,000, lowering net to around \$1.40 a share, against \$3.93 reported.

In addition, overpayment of \$3,815,856 between Dec. 1, 1939, and Nov. 30, 1941, was claimed by the Board. However, the Post Office must sue to recover this sum and the outcome is clouded. There have been instances of retroactive rate increases, but the precedent for such a reduction is disputable.

Standard & Poor's said that the precedent "relating mail rates to invested capital is forbidding to other profitable lines and dampens the future of now unprofitable companies."

The concern also took notice of the market reaction to the decision stating:

"Its nature, however, removes speculative appeal from the group on both a short and long term basis. Ratings on all issues representing the industry have been changed to below average."

"The CAB is also reviewing mail pay rates of Eastern Air Lines and Pan American Airways, both profitable lines," the advisory service states. "In the light of the American decision, both can expect drastic downward revisions. An alarming feature of the ruling was the statement that the new rate will result in an estimated net return on American's investment of 9.86%, after Federal taxes, indicating that the Board had adopted a definite regulatory philosophy. Lines now earning small profits or reporting deficits seem safe from rate reductions, but their stockholders can apparently look forward to a low ceiling on ultimate profits."

Standard & Poor's also went a step further and recommended switches for air line stocks.

Urges Sale of Airlines Stocks

"Airlines stocks, in most cases, have been selling at high ratios to earnings on the basis of post-war prospects. As the probable end of the war recedes farther into the future, such high ratios have less justification, and the indications of severe curtailment in mail revenue further reduce their appeal."

"Square D, selling at about the same price as American Airlines, and Zenith (radio), selling at about the same price as TWA or United Air Lines, are much more attractively priced on a statistical basis. While earnings of Square D might be expected to decline with the end of the war and the consequent curtailment of military demand for its products, the company will retain an important place in two industries with promising long-term possibilities—aircraft instruments and electrical controls. Meanwhile, it is selling at a very low ratio to war-time earnings. Zenith might well do better in a peace economy than under war conditions."

"The air transport companies, on the other hand, are unlikely to earn substantial profits as long as the war restricts their expansion, and the possibilities of the remote post-war future, while generally promising, are too distant to justify a high appraisal today."

Hare's Sends Open Letter to Congress

Hare's Research & Management, Ltd., on Apr. 1 mailed a letter to each Senator and Representative stating that "in view of the recent action in the American Airlines case, and the report of the Board's (CAB) examiner in the pending case of Eastern Air Lines, there is grave doubt whether the intent of this declared policy (that set forth by Congress in passing the Civil Aeronautics Act) is being executed."

"Note the date Dec. 31, 1939 (probably means Dec. 1, 1939, date on which the retroactive cut was made effective—Ed. Note) cited by the Civil Aeronautics Board. On that date the company was still 'in the red', but since then has been in black ink. What does this signify? Are we to assume that American Airlines, or any other airline, must not be permitted to demonstrate earning power? Does it indicate that as soon as the company initiates the payment of dividends to stockholders, who have risked capital in the enterprise, mail pay must be cut, earnings reduced to meager amounts, and dividends made once more impossible," the service continued.

"If this is to be the policy of the Board, how can the air transportation industry flourish and expand? 'Growth'

enterprises are nurtured on the flow of capital, which they obtain through public financing and through earnings. If earnings are meager or non-existent, they can neither attract new capital nor build up capital. The result is stagnation and death, years before their potential maturity has been reached. Does such an eventuality represent the will of Congress in relation to a domestic air transportation system?

"Of the 18 air transport companies which reported to the Civil Aeronautics Board in 1940, only two reported substantial net earnings, viz: American Airlines and Eastern Air Lines; one showed moderate earnings (United Air Lines); eight showed meager earnings; and seven reported deficits."

"It is pertinent at this point to repeat that Eastern Air Lines, the only other company to demonstrate substantial earning power, is also under review by the Board, whose examiner has already recommended a drastic mail pay cut."

"What does all this mean, and what are its implications for the future of air transportation? Is it the policy of the Board to cut mail pay as soon as companies get 'out of the red'? Does it imply that the air transportation industry will not be allowed to operate profitably, to build up adequate reserve and capital funds, to attract new capital and to reward stockholders."

"We are only at the beginning of the era of flight. Growth possibilities are enormous and can be achieved through the American spirit of initiative and enterprise. But there must be incentive, a goal to work for, and a reward for work well done. This achieving spirit, however, can be stifled through unwieldy, over-zealous and restrictive bureaucratic control."

"Congress has charged the Civil Aeronautics Authority with 'the encouragement and development of an air transportation system properly adapted to present and future needs . . . and to foster sound economic conditions in such transportation . . .'"

"Is it not time for Congress to ascertain how wisely, effectively and constructively its wishes in this respect are being carried out?"

These are two bitterly pessimistic financial opinions as to the outlook for airline earnings engendered by a decision in one case. Some other quarters prefer to believe that air transportation is one of the really coming industries of this country and that expansion in both passenger and freight service will be truly remarkable after the war.

In fact, one firm not long ago in discussing the prospects for the post-war period, pointed out that the real development of railroad and automotive transportation both followed previous wars and predicted that terrific development of air transportation would be a logical outcome of the present conflict in view of the tremendous expansion of facilities for building of aircraft and the hundreds of thousands of persons who are being trained to operate aircraft.

Meanwhile, airline shares, generally, traded on the Big Board, have sought lower levels since the decision. American Airlines has already been discussed. Pan American set new low marks for 1942 every day for a week, dropping to 12½, against a 1942 high of 17½; 1941 top was 19½ and low 18. In one day's trading six air transport issues set new 1942 lows. The swing in the first three months of this year in some other airline issues is as follows: Eastern, 27½-18½ (1941, 34-24); Northwest, not readily available. (1941, 14-7½); United, 11½-8½ (1941, 17½-9½); and TWA, 10½-8 (1941, 17½-8½).

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Company	Page
Adel Precision Products Corp.	4th Cover
Aeroquip Corp.	3d Cover
Aircooled Motors Corp.	37
Aircraft Components, Inc.	34
American Airlines	37
Beech Aircraft Corp.	29
B. G. Corp.	15
Biltmore Hotel	36
Boots Aircraft Nut Corp.	12
Continental Air Lines ...	36
Curtiss-Wright Technical Institute	23
Elastic Stop Nut Corp. ...	35
Goodyear Aircraft Corp.	9
Gulf Oil Corp.	7
Kidde & Co. Inc., Walter ...	33
McDonnell Aircraft Corp.	5
Martin Co., Glenn L. ...	24
New Yorker, Hotel	36
North American Aviation ...	17
Northrop Aircraft Inc. ...	21
Parks Air College Inc. ...	38
Pioneer Parachute Co. ...	34
Pratt & Whitney Aircraft ...	32
Pump Engineering Service Corp.	2d Cover
Solar Aircraft Co.	28
Standard Aircraft Products Inc.	34
Suncook Mills	38
Travaleer	36
TWA	19
United Air Lines	31
Wright Aeronautical Corp.	11

Manufacturers' Annual Reports

Martin's Eastern Plants Near Completion; Full Production Awaits Materials Supply

AS SOON as the government provides us with a balanced and coordinated flow of materials, parts and accessories, the rate of production will be rapidly accelerated to the full capacity of the company's facilities," Glenn L. Martin, president of Glenn L. Martin Co., advises stockholders in his annual report for 1941.

The major units of the Martin Company near Baltimore "are essentially complete," which will further increase plant capacity and make it even more necessary that components reach Middle River, the report points out.

"During 1941, the priorities ratings assigned to the company's major aircraft contracts were not as high as those assigned to certain other contracts for aircraft, as well as to certain other classes of war products," Martin asserts. "Consequently, both facilities expansion and the aircraft production programs did not progress as rapidly as was anticipated at the time these undertakings were assumed."

Employment by the company has expanded more than 1,000% in less than three years. A large number of women have been employed in the manufacturing departments and the company has expanded its employment of Negroes.

During 1941, earnings were \$5,773,149, or \$5.24 each on 1,101,169 \$1-par capital shares, against \$5,424,489, or \$4.94 each on 1,097,323 shares in 1940. Net sales were \$67,237,689 against \$30,663,337 in 1940. Cost of 1941 sales were \$55,025,990. Provision for taxes was \$6,877,309 compared with \$3,020,500 in 1940.

Balance sheet as of Dec. 31: Assets \$163,244,559; current assets \$125,397,547, including cash \$20,131,569, advances to major subcontractors \$10,500,000 and inventories \$83,934,399. Current liabilities \$117,597,834, including advances from government \$72,838,415 and advances from others under contract terms \$23,729,117, but excluding \$20,000,000 bank loans maturing Oct. 1, against which amounts receivable under EPF contracts have been assigned. Capital surplus was \$11,508,120; earned surplus \$11,031,070.

Stockholders were scheduled on Apr. 14 to vote on a proposal "to provide additional inducement to persons to serve or continue to serve the company as directors or officers by affording them some protection in connection with certain claims or suits if any are brought against them." Ballots were also to be cast for re-election of present directors.

The proxy statement shows that aggregate remuneration paid to officers and directors during 1941 was \$139,969 plus 1,400 shares of common, issued Dec. 29, having a market value of \$21,875 per share on that date. These payments do not include \$58,625 paid to Jones, Day, Cockley & Reavis for legal services during 1941. Salaries include: Glenn L. Martin, \$60,260; Joseph T. Hartson, \$28,470 and 500 shares of common; and Harry F. Vollmer, \$21,470 and 400 shares of common.

Nominees owned the following shares of stock as of Feb. 20, 1942: Martin, 320,000 (29.06% of total issued and outstanding); J. T. Hartson, 2,300; H. F. Vollmer, 917; Myron G. Shook, 400; William K. Ebel, 450; Howard Bruce, 2,053; and John W. Castles, 2,500. Smith, Barney & Co., underwriter, on same date held 6,881 shares of record, but not beneficially.

Jacobs Engine

Jacobs Aircraft Engine Co. 1941 net earnings were \$928,756 after charges, depreciation, provisions for taxes and \$328,800 provision for contingencies and \$158,853 for amortization of emergency plant facilities. This equals \$1.50 a share of 618,546 common shares and compares with net operating deficit of \$262,999 in 1940. Sales totaled \$13,651,993 against \$1,386,271 in 1940. Business volume represented an increase of 885% over 1940 and approximately 2934% over 1939. Taxes amounted to \$1,887,500, equivalent to \$3.06 a common share.

Balance Sheet as of Dec. 31: assets \$3,589,834; current assets \$6,657,034; current liabilities \$6,570,862; capital \$618,546; paid-in surplus \$950,832; earned surplus \$120,793.

Air Cruisers Inc.

Air Cruisers, Inc., balance sheet as of Dec. 31: Assets \$2,630,433; current assets \$2,441,181; current liabilities \$433,999; capital stock \$188,841; surplus \$492,499.

Sperry Corp.

Sperry Corp. and wholly-owned domestic subsidiaries showed net income of \$2,811,511 during 1941, after deduction of charges, taxes and provision of \$999,633 for post-war adjustments. This equals \$4.11 each on 2,015,565 shares of \$1-par capital stock and compares with 1940 income of \$7,854,176 or \$3.90 a share. Tax provision was \$19,400,000 against \$8,486,842 in 1940.

Consolidated balance sheet as of Dec. 31: Assets \$94,971,312; current assets \$81,692,500; cash \$14,238,981; inventories and work in progress \$49,510,845; current liabilities \$72,140,090; earned surplus \$15,481,777.

Aviation Corp.

Aviation Corp.'s consolidated net profit for quarter ended Feb. 28 was \$1,002,844 after deduction of \$809,573 for taxes. This net equals 17c each on 5,782,222 shares of capital stock and compares with net of \$198,093, or 4c each on 4,336,667 shares, in 1940 quarter.

Earnings include dividends received during the quarter from American Airlines, Inc., Pan American Airways Corp. and Auburn Central Manufacturing Co. and may be subject to adjustment, depending upon the 1942 tax bill. Victor Emanuel, president, states. The profits reflect earnings of the company's manufacturing units, Republic Aircraft Products, Lycoming & Spencer Heater Division; and its wholly-owned subsidiary, American Propeller Corp., not yet in production on propeller blades.

Net sales of Aviation Corp. for the period were \$7,274,968 compared with \$2,466,600 in the 1940 quarter. Cost of sales, including amortization of deferred engineering and experimental expenses applicable to sales, were \$5,429,257, against \$2,024,415 in 1940 period. Other income was \$605,772.

Company's equity in undistributed earnings of subsidiaries not consolidated

in the statement, comprising Vultee aircraft, which in turn owned 34% Consolidated Aircraft Corp.'s common shares, New York Shipbuilding Corp. and Auburn Central, was equivalent to \$1.00 a share.

Expenses for selling and advertising were \$81,749 and for general administration \$446,838. Depreciation and amortization of fixed assets was provided during the period in the amount of \$144,000.

Aro Equipment Corp.

Aro Equipment Corp. in 11 months ended Nov. 30 had net profit of \$210,436, after depreciation and taxes, equal to \$1.18 each on 156,918 shares, compared with earnings of \$167,726, or \$1.07 a share, for the full year of 1940. Fiscal year was changed to end Nov. 30.

Aircraft & Diesel

Aircraft & Diesel Equipment Co. reports profit of \$138,702 on sales of \$1,165,107 in year ended Nov. 30. Company manufactures precision machine parts and is working almost 100% on new orders. Balance Sheet as of Nov. 30: Assets \$1,020,316; current assets \$32,315; current liabilities \$238,490; capital stock \$333,236; paid-in surplus \$258,885; earned surplus \$91,685.

Sweebrock Aviation Co.

Sweebrock Aviation Co. Inc., earned \$1,836 during 1941 on sales of \$74,682. Company makes fuselage and wing covers. Balance Sheet as of Dec. 31: Assets \$27,881; current assets \$22,881; current liabilities \$19,899; capital stock \$7,400; earned surplus \$582.

Link Aviation Devices

Link Aviation Devices, Inc., balance sheet as of Dec. 31: Assets \$2,715,182; current assets \$2,260,025; current liabilities \$288,004; capital stock \$5,000; paid-in surplus \$2,298; earned surplus \$1,026,269.

Aviation Supply Corp.

Aviation Supply Corp. reports net profit for 1941 of \$13,986 on net sales of \$194,705. Balance Sheet as of Dec. 31: assets \$89,109; current assets \$11,936; current liabilities \$43,999; capital stock \$10,000; surplus and undivided profits \$33,123.

Aeronautical Products

Aeronautical Products, Inc. had net profit of \$61,688 in six months ended Nov. 30. Dividends paid amounted to \$37,500.

Balance Sheet, Nov. 30: Assets \$641,963; current assets \$442,527; current liabilities \$254,990; common stock \$125,000; capital surplus \$146,279; earned surplus \$107,528.

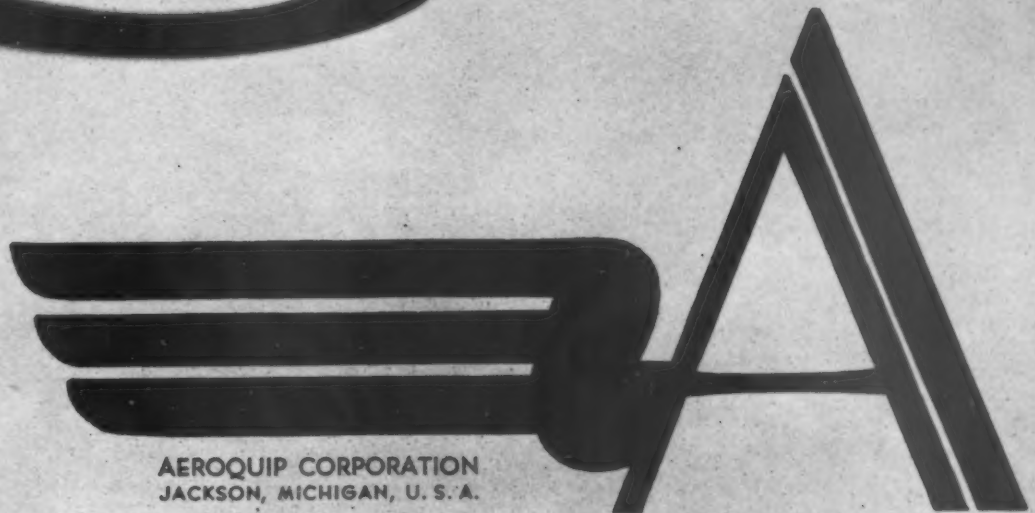
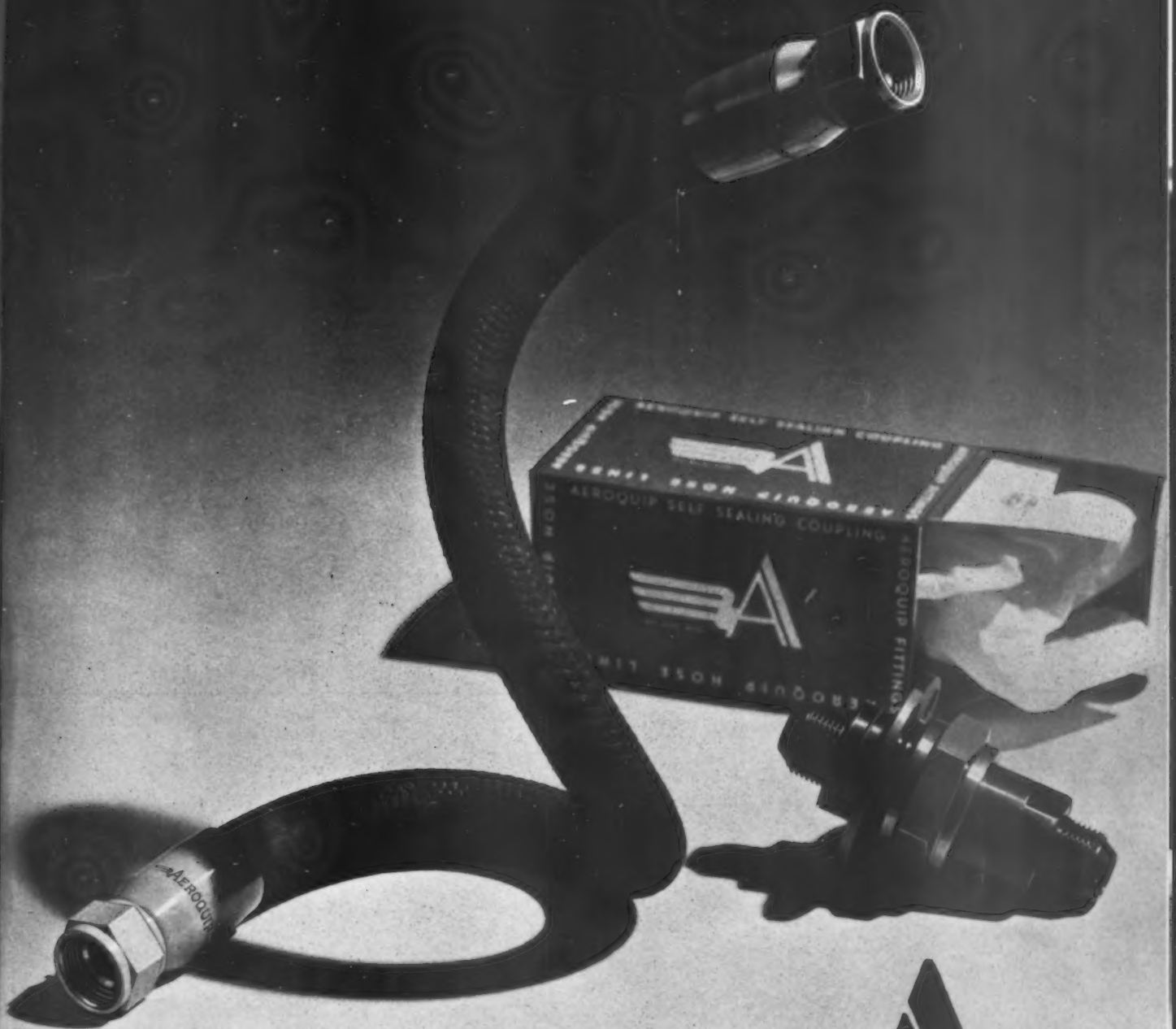
Pyle-National Co.

Pyle-National Co., (maker of airport and aircraft lighting equipment) reports net income for 1941 of \$410,530, equal after preferred dividends to \$2.23 each on 149,058 shares, compared with \$171,039, or 62c, in 1940.

Lear Avia Inc.

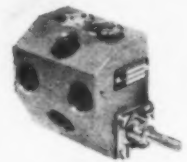
Lear Avia, Inc., (wholly-owned subsidiary of Lear Avia of California, Inc.) reports balance sheet as of Dec. 31: Assets \$1,538,650; current assets \$1,186,042; current liabilities \$1,025,175; earned surplus \$96,883.

AEROQUIP HOSE LINES

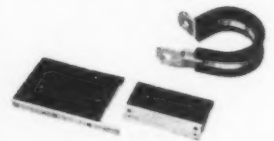


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